

Flight, June 8, 1912.

FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

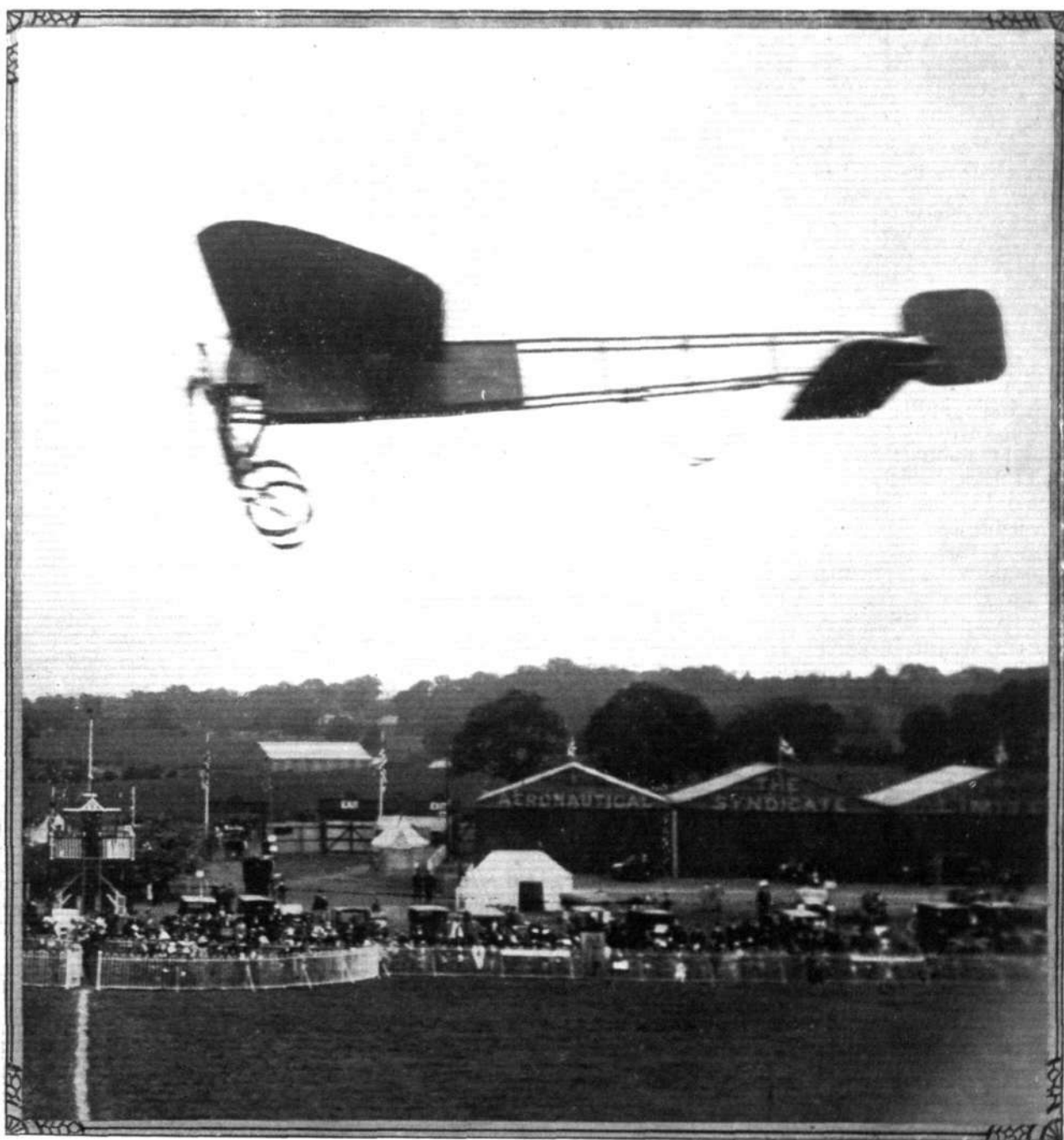
OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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JUNE 8, 1912.

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Mr. B. C. Hucks in his Blériot passing the Judges' box on the first circuit in the Hendon cross-country handicap last Saturday week.

EDITORIAL COMMENT.

The King and the Royal Aero Club.

It is with considerable gratification that we have to announce that a still further mark of Royal consideration has been extended to the Royal Aero Club by His Majesty King George having graciously consented to become Patron of the Club. It will be remembered that his late Majesty King Edward showed his deep interest in the development of aviation by according his permission to the Club to make use of the prefix "Royal" in its title, and now our present King has shown that his interest in the science is no less than that of his lamented father by conferring this latest signal distinction on the Club. We heartily congratulate the R.Ae.C. upon the announcement, which cannot but have an excellent effect upon its splendid work and status.

To India by Air.

There is at the moment a most ambitious project on foot—no less than a flight from London to Karachi, in India. The moving spirit in the enterprise is Mr. Ernest Esdaile, who, if we mistake not, was at one time well known in motoring circles for his connection with the Adams car, and his object in engineering this daring feat is a two-fold one.

First of all, it is to be an all-British affair—machines and aviators are to be British—and it scarcely needs pointing out that effect of success would be of inestimable value to the home industry. An even larger consideration is that of the effect produced upon the minds of the people of the countries traversed and particularly on the native races of India itself. As the originator himself has pointed out, there is also a commercial end to the undertaking, and the ultimate object is to establish in India a number of flying schools for British officers and others, a worthy enough object in itself though we should hardly have thought that the establishment of such schools depended upon the successful carrying out of so ambitious a programme as the flight from London to India of three well-known aviators. However, that is by the way and must not be taken to imply any adverse criticism of the project itself. For that on its merits we have nothing but approval if carried out properly. The more it can be demonstrated that the aeroplane is fit to lie in the line with more orthodox methods of transport, the better it will ultimately be for the movement.

The route to be traversed is across Europe to Vienna and thence following the course of the Danube to Nikopoli and over the Shipka Pass to Adrianople. Then, from Constantinople to Bozanti, the route follows the Anatolia railway and thence by way of Tarsus, Adana, Aleppo, Bagdad, the Euphrates and Tigris to Bushire. From Bushire the shores of the Persian Gulf mark the line of route to Bunder Abbas, and then it follows the coast-line of the Arabian Sea to Karachi. For our own part, we consider the project an entirely practicable one. All that is necessary is that the organisation should leave nothing to chance, and then there is very little doubt about the physical and mechanical possibility of a 4,500 miles' flight. We understand that three prominent airmen have been approached and have practically engaged themselves to take part in the enterprise, and there is a strong probability that it will be carried out—or at least attempted before the end of the present year.

The First Aerial Derby.

Races of the type of to-day's "Aerial Derby" are undoubtedly on the right lines for the encouragement of the movement among those actually interested in flying and for its popularisation in the eyes of the public. As regards the former, the prizes are quite well worth competing for, and the winner will receive a sum substantial enough to pay his out-of-pocket flying expenses for some little time. We are no more enamoured of the genus "pot-hunter" in any sport than the most pronounced of sporting purists, but in the case of aviation we do think that it is absolutely essential, if progress is to be achieved, that prize money should be forthcoming on a generous scale.

While it is true that flying is a sport—almost the highest form of sport, since its risks are at present perhaps greater than in the case of others with the possible exception of steeplechasing and big game shooting—it has greater claims to monetary consideration in regard to prizes than any other sport which is recognised as such. For one thing, it goes much deeper than simple sport, for it has a bearing on the future of the nation that no other pursuit ranking as a sport can possibly do.

There is no need for us to point out why this is so—the lesson has been read and re-read by ourselves and others until it has almost become wearisome in its repetition. Then, it is not a cheap form of pastime, and there is no use blinking the fact that in order to continue actively in its pursuit an aviator must either be possessed of some means or have the backing of men of means with a *penchant* for the advancement of science or who are actuated with the laudably patriotic desire to see this country keep well abreast of its rivals in the aerial art. Therefore, the aviator of comparatively restricted means must depend to a large extent upon what he can win in prize money or obtain by exhibition flying.

Now, this may look like a piece of special pleading, but in reality it is not, for there can be no question but that it is absolutely essential for us to keep well to the front in the race for aerial supremacy and that we cannot do unless, to put the matter quite bluntly, the necessary support is forthcoming.

To take now our second point. Nine-tenths of the apathy towards flying displayed by the general public is undoubtedly due to a want of familiarity with the active side of the movement. In spite of the very large number of flights that are made every week, the vast majority of the inhabitants of these islands have never seen an aeroplane in flight, and there is thus no reality in the movement, so far as they are concerned. The reason for this is that most of the flying is done in restricted areas. What is wanted is more cross-country work of the kind to be done in to-day's Derby, and from the point of view inferred, we regard the race as an essentially valuable one.

The more of such events that can be organised, the better it will be for the movement, because of the immense amount of public interest they must arouse, and we trust to see more and more of them organised, as their true meaning comes to be appreciated by those who are working for its advancement. They are far removed from circus performances. They are practical demonstrations of the art of flying.

JUNE MEETING AT HENDON.

SOME very decent flying was witnessed at Hendon last Saturday on the occasion of the first June Meeting, in spite of the inclement weather. Two new comers also during the day made their first appearance at Hendon: M. Pierre Verrier, of the Aircraft Co., with his graceful Maurice Farman biplane, and "Baby Jumbo," the *Daily Mirror* baby elephant. The wind was very erratic all the afternoon, sometimes falling to about 4 m.p.h., but mostly averaging 10 m.p.h. At about 3.30 p.m. Mr. Lewis Turner, simultaneously with the firing of three bombs, made a flight on the Howard Wright biplane, followed shortly after by Mr. Noel on the Farman No. 9. Hamel's Blériot (single-seater) was then brought out, and after a preliminary run of the engine, Hamel gave a flight of about five minutes. The Kadley-Moorhouse monoplane was also brought to the starting line.

The first event was the cross-country handicap, which started at 4.20 p.m. This time the course was to the Hermitage, Stanmore, and back twice, a distance of about 18 miles. There were three entrants for this race: Lewis Turner (Howard Wright biplane No. 10), W. Moorhouse (R. and M. monoplane), and G. Hamel (Blériot monoplane). The latter was scratch, giving Turner 9 min. 39 secs. start, and Moorhouse 1 min. 17 secs. start. Turner got off very well, but the engine of the "R. and M." monoplane was obstinate, so Moorhouse could not get away on the fall of the flag, in fact Hamel, although he was also late through engine trouble, was off before him. The finish was rather exciting, for Turner was seen returning apparently leading, but Hamel suddenly made his appearance flying very low. He passed the biplane just inside the aerodrome, crossing the line well within 100 yards of his rival. Moorhouse followed soon after, having made up very well for the time lost in starting. The times were as follows: Hamel, 29 min. 49 secs., Turner, 30 mins., and Moorhouse 32 mins. 20 secs.

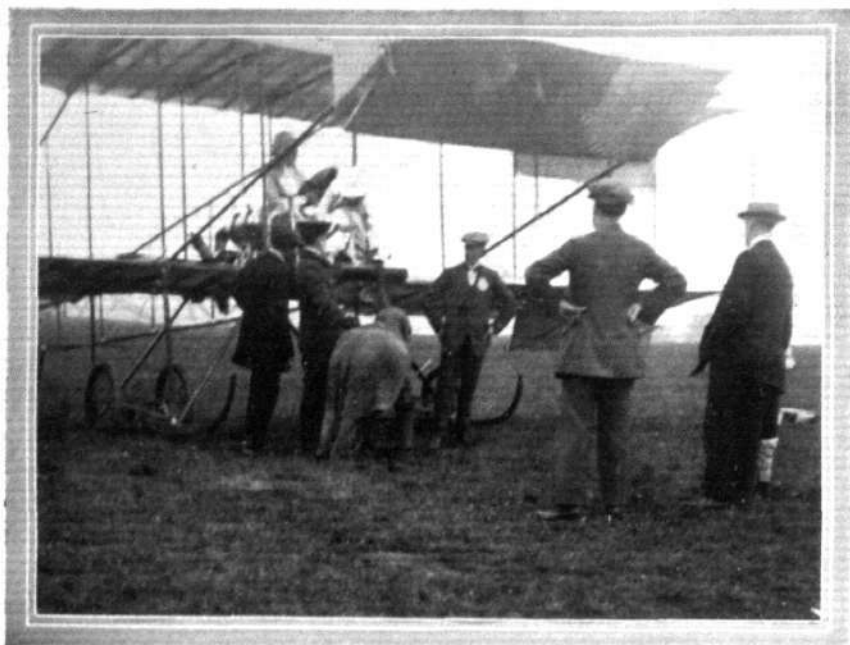
While the cross-country race was in progress the Maurice Farman biplane was brought out and M. Pierre Verrier gave a splendid exhibition flight of about ten minutes. He got off at a very sharp angle—quite like one of Hamel's—and soon rose to a height well above 500 ft. He then throttled down, and glided to earth very slowly; at times the biplane seemed to me almost motionless. What struck the writer most, however, was the manner in which the biplane suddenly increased its speed when the throttle was opened wide. For when he had nearly reached the ground he opened up a little,



Lieut. B. T. James, who qualified for his pilot's certificate on a Howard Wright at Hendon on June 1st after the fourth day only in an aeroplane.



An incident in connection with the Relay Race at Hendon, when Valentine and Ewen secured a win. Valentine is just delivering his despatch to the judge in the race.



Mrs. Stocks just before starting for a flight in the Howard Wright biplane at Hendon last week-end is introduced to the *Daily Mirror's* "Baby Jumbo," but unfortunately (?) Mrs. Stocks already had the passenger seat occupied, and Jumbo therefore was *not* invited for a spin.

so that the biplane circled the aerodrome at a slow speed, and without dropping. Then, when the throttle was opened wide, the biplane perceptibly shot forward. The engine employed is a 70-h.p. Renault. A little later Verrier was up again, this time with a passenger; he makes very neat landings.

Shortly after 5 o'clock a start was made for the speed handicap,

which was flown in two heats of four laps each, and a six-lap final. Verrier on the Maurice Farman and Hamel on the single-seater Blériot were in the first heat, and Turner on the Howard Wright and Moorhouse on the "R. and M." monoplane made up the second heat. Hamel gave Verrier 1 min. start, and Moorhouse gave Turner 2 mins. 28 secs. start.

The first heat was won by Verrier who kept well ahead of Hamel, the latter seemingly gaining very little. In the second heat Moorhouse got away just as Turner had completed his first lap, and was immediately overhead. Both pilots manoeuvred their mounts in fine style, and Moorhouse just managed to round No. 2 pylon in front of Turner, finally winning the heat. The times for the two heats were as follows: 1st heat, Verrier, 7 mins. 47 secs.; Hamel, 8 mins. 10 $\frac{1}{2}$ secs. 2nd heat, Moorhouse, 9 mins. 4 secs.; Turner, 10 mins. 2 secs.

In the final there was some very fine flying. Verrier, as before, managed to keep well ahead, banking splendidly at the pylons. On his fifth lap, however, he fouled pylon No. 6, but noticing this immediately, he made a sharp, banked turn and took it again in fine style. Although this delayed him 35 seconds, he won the final, thus achieving marked success in his first competition at Hendon. During the speed contest it started to rain, so that there was an interval of about half-an-hour before the altitude contest, Turner in the meanwhile taking a passenger up for a flight in the Howard Wright biplane. At about 6.40 p.m., Hamel made a start for the altitude contest in the two-seater Blériot, accompanied by Miss Trehawke Davies. He had not gone far, however, when he made a sudden landing and had the machine brought back to the starting line.

He stated that a slight adjustment to the control was required, so he decided to fly the single-seater instead. After a short delay—for the purpose of filling Hamel's barograph with the necessary ink—he made a fresh start, Moorhouse having started just before. The latter came down after having reached a height of about 500 feet, Hamel remaining aloft until he reached a height



Mr. Claude Grahame-White doing a turn over the hangars at the London Aerodrome on the school Farman 'bus during one of the regular week-end meetings at Hendon.



M. Pierre Verrier, of the Aircraft Co., in front of his Maurice Farman biplane. He made his first appearance at Hendon Aerodrome last Saturday with the M. Farman machine, and gave some remarkable demonstrations of his qualities as a skilful pilot.

of 2,500 feet, thus winning the St. Ivel Trophy. This brought Saturday's meeting to a close.

On Sunday afternoon, although very fine, the wind was decidedly nasty, blowing from 10 to 20 m.p.h. and gusty. It was not until about 4.30 that anyone went up. The first away was A. Noel, a new pilot of the Grahame-White School, on the Farman. He made a straight flight across the ground and then a half circuit. He was followed immediately after by Turner on the Howard Wright. Both were rocking in a fearsome manner, so no more flying was done till about 5.10 p.m., when Noel had another try on the Farman, this time doing two circuits, while Turner joined him on the Howard Wright. They both still seemed far from steady, so there was another wait. Shortly after 5.30 p.m., Gates had a try on the Howard Wright, but after one circuit came down, reporting it still very "puffy." Nevertheless, Turner took a turn immediately after and put in three circuits on the same machine. About 6 o'clock Noel went up again on the Farman and declared the wind as bad as ever. It was not until 6.30 p.m., that the wind began to drop, and Hamel, with Miss Davies then put in a splendid flight, circling and banking at a great height, for about 15 minutes. He finished up with a fine spiral *vol plané*. Sabelli was also making a very pretty flight on the British-built Deperdussin and just before he came down Turner went up on the Howard Wright, giving about five minutes "figure" flying, doing switchbacks, &c.

After this, Turner, Noel, and Hamel—with passengers—put in a good bit of flying until after 7 p.m. Then a little exciting incident occurred. Turner, who was up with a lady passenger, was passing pylon No. 1 when Hamel started from the far end of the ground. He was a little bit higher than Turner, and was making straight for the biplane. Both machines got nearer and nearer, and when almost meeting, Hamel dived a bit, and just passed in front of Turner, both continuing on their way as if nothing had happened. Noel (on the Farman), and Turner with passenger on the Howard Wright, then went up again, while Hamel tried a new single-seater Blériot belonging to Mr. Weir. He carried out some really fine flying on this machine, making some exceedingly sharp, banked turns, both right and left-hand. Mr. Gates then indulged in a flight on the Howard Wright, and Sabelli went up again on the Deperdussin, finishing with a fine *vol plané*. The new Blériot was then handed over to its owner, Mr. Weir, who made a very nice flight—his first for a year. After this many other flights were in progress until darkness prevented any further work, Mr. Gates taking up his first passenger on the Farman.

Cross-Country Handicap (about 18 miles).

Prizes presented by Miss Julia Neilson and Mr. Fred Terry.

	Start.	H'cap.	Net
	m. s.	m. s.	m. s.
1. Gustav Hamel (50-h.p. Gnome-Blériot)	Scratch	29 49	20 10*
2. Lewis Turner (50-h.p. Gnome-Howard Wright)	...	9 39	30 0
3. W. Moorhouse (50-h.p. Gnome-R. & M.)	1 17	32 20	23 58*

Grand Speed Handicap (Final—6 laps).

Prizes presented by Paul Martinetti, Esq.

1. Pierre Verrier (70-h.p. Renault-Maurice Farman)	...	1 18	11 34½	11 34½
2. W. Moorhouse (50-h.p. Gnome-R. & M.)	Scratch	11 55½	10 36½	

Altitude Contest for the St. Ivel Challenge Trophy.

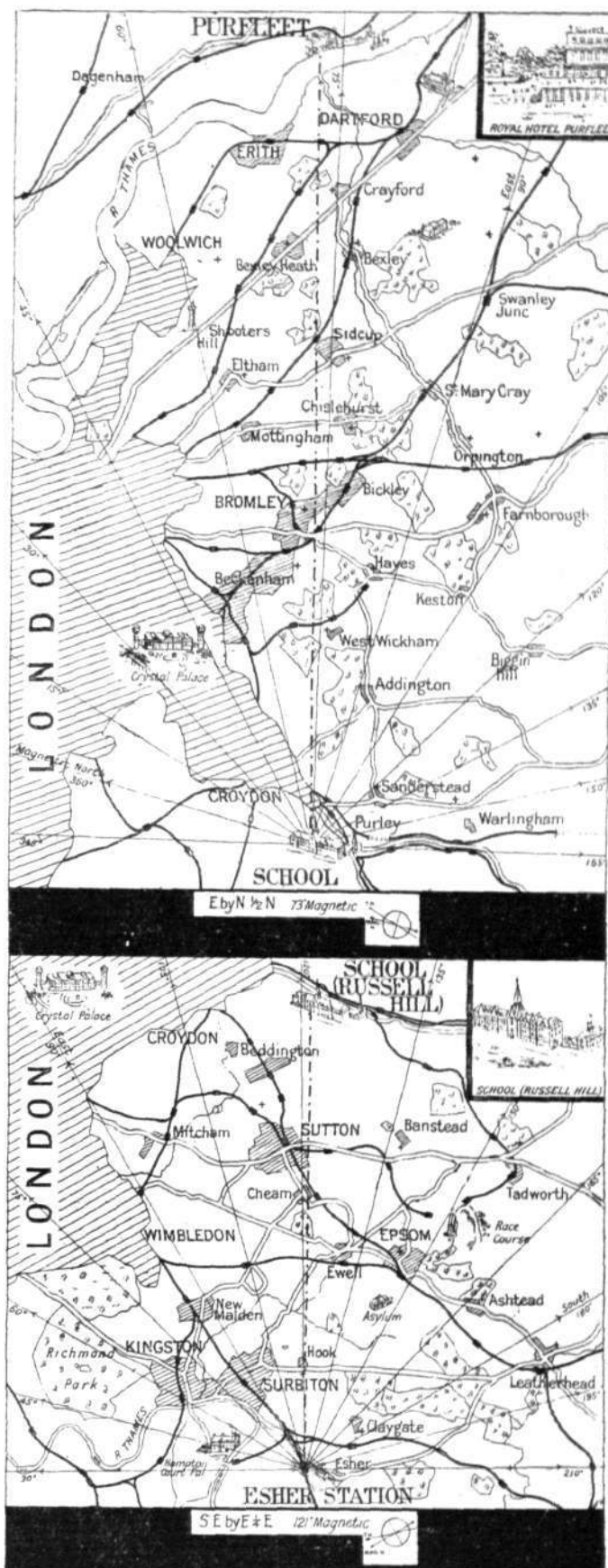
1. Gustav Hamel (50-h.p. Gnome-Blériot) ... 2,500 ft.
2. W. Moorhouse (50-h.p. Gnome-R. and M.) about 500 ft.

* Both Moorhouse and Hamel failed to start on the fall of the flag, so their actual flying times would be a little less than the figures given.



Good Progress with the "Water Hen."

LAST week some very fine flights were made by Mr. Stanley Adams on Mr. Wakefield's hydro-biplane over Lake Windermere, and regular passenger trips are now being carried out. On Monday week seven passengers, including two ladies, paid their fees, and were carried for trips over the lake. Although the wind was gusty on Tuesday and Wednesday, further passenger voyages were carried out, and on Thursday Mr. Adams made a solo flight to Bowness and Waterhead, alighting on the water at the latter point. A stop was also made at Henholme, on the way back to Hill of Oaks. The visit to Bowness was arranged in connection with the annual sports, and the spectators were greatly interested in the evolutions of the "Water Hen" over the lake. About 22 miles were covered altogether.



A specimen map for use by competitors in the Aerial Derby round London on Saturday, showing the direct route through the air which the aeroplanes should take between Esher, Purley and Purfleet. These maps are specially prepared by Messrs. H. Clift and Alex. Gross, and published by Geographia, Ltd.

ROYAL FLYING CORPS.

THE War Office has issued the following Terms of Enlistment in, and Transfer to, the Royal Flying Corps, Military Wing.

1. Men enlisting in, or transferring to, the Royal Flying Corps, Military Wing, will be required to undergo such instruction as may be necessary, and to perform any duties that may be required of them in connection with the care, management, and navigation of all forms of military aircraft in the air, or on land or water. They will further be liable to be employed either for Naval or Military purposes as required. Applicants for enlistment should apply to the nearest recruiting officer, or by letter to the Officer Commanding, Military Wing, Royal Flying Corps, Aldershot, and must be prepared to furnish certificates of character of past trade experience and of present trade qualifications.

2. **Standards.**—Age, 18 to 30 years; height, 5 ft. 2 ins. and upwards; chest measurement varies according to height and age.

Candidates not in all respects eligible as to physical standard, but otherwise qualified, may be specially considered for enlistment.

3. **Terms of Service for Enlistment.**—For 4 years with the Colours, and 4 years in the Reserve.

4. **Terms of Service for Transfers.**—Transfers from other arms will be accepted, but the terms of service of a soldier accepted for transfer will be varied so that he shall complete 4 years Colour service with the Royal Flying Corps from the date of transfer, and the unexpired portion of his original engagement in the Reserve of the Royal Flying Corps.

Probation.—All transfers from other arms will be made on probation for 6 months. Non-commissioned officers of the rank of serjeant and upwards may be transferred in the rank of serjeant, provided that, if of higher rank than serjeant, they revert to that rank before transfer. All other transfers will be made in the rank of private (non-commissioned officers other than those mentioned above may also volunteer, but on the understanding that they revert to the ranks before leaving their regiment or corps on probation). Final transfers will date from date of commencement of probation.

5. **Extension of Service.**—Extensions of service with the Colours will be allowed under conditions which will be published later.

6. The following classes are required:—

(a) Men who have served as an apprentice or improver in a general mechanical engineer's workshop, and, in addition, have served on full rate in a petrol motor engineering works, including experience in the engine test shop, or have served as an aeroplane mechanic. They should have a good knowledge of general motor engineering, a thorough knowledge of the principles of magneto and coil ignitions, and be able to make intelligible sketches of machinery details, and rough calculations connected therewith.

(b) Men of the following trades: Blacksmith, carpenter and joiner, clerk, coppersmith, draughtsman (mechanical), electrician, fitter and turner, harness maker, instrument repairer, metal turner, painter, photographer, rigger, sailmaker, tinsmith, wheelwright, whitesmith, wireless operator, wood turner.

(c) (i) Men of any of the following minor trades: Cable jointer, chauffeur, driller, dynamo attendant, electric-bell fitter, joiner's helper, machinist, motor fitter, plumber's mate, switchboard attendant, tool grinder, wireman.

(ii) Men above the average intelligence, with a certain amount of education equivalent to the standard of a 3rd class school certificate.

Men of Class (a) specially selected by the Officer Commanding, Military Wing, Royal Flying Corps, may on final approval be at once promoted serjeants to fill existing vacancies on the establishment. It must be understood that men so promoted will be on probation for one year, and will be liable to discharge should they not prove fitted for the duties of the rank in the Corps.

Those of Class (a) or (b) who on enlistment successfully pass a trade test in one of the required trades, will be graded as 1st class Air mechanics from the date on which they are finally dismissed from recruit training.

Those of Class (c) will be enlisted and graded as 2nd class Air mechanics.

7. **Promotion.**—Vacancies in the rank of warrant officer will be filled by the promotion of selected serjeants. Vacancies in the rank of serjeant and 1st class Air mechanic will be filled either by promotion from the rank below or by direct enlistment as provided for above.

Special promotion to any rank may be given for skill in flying.

8. **Pay, &c.**—The daily rates of pay of men enlisted or transferred to serve in the Royal Flying Corps, Military Wing, are as follows:

Warrant officer, 9s.; Serjeant, 6s.; 1st class Air mechanic, 4s.; 2nd class Air mechanic, 2s.

9. **Flying Pay.**—Warrant officers, N.C.Os. and men who are selected to be trained as aeroplane flyers will be sent to the Central Flying School to undergo a course of instruction in flying. While

undergoing this course they will, in addition to the pay of their rank in the Royal Flying Corps, receive flying pay at the rate of 1s. (one shilling) per diem.

On completion of the course, candidates will be tested, and those attaining the standard required will be entitled to 4s. or 2s. per diem flying pay in accordance with their proficiency in flying.

Warrant officers, N.C.Os. and men in receipt of flying pay will be tested half-yearly, and retention of flying pay by them will depend upon their passing a satisfactory test. If found efficient at these half-yearly tests they will be re-classified as 1st or 2nd class flyers in accordance with the standard of proficiency attained by them.

10. Warrant officers and others serving in the Airship and Kite squadron will, unless they are qualified aeroplane flyers, receive flying pay at the rate of 2s. a day only for days on which they make an ascent by airship or kite.

11. In addition to pay, warrant officers, N.C.Os. and men will be provided with messing allowance, quarters or lodging allowance, fuel and light, and rations of bread and meat.

12. On enlistment, a free outfit of clothing and necessaries will be supplied, which will subsequently be kept up by the man out of a quarterly clothing and kit allowance, the first issue of which will become due on the fourth clothing quarter day following enlistment.

13. **Separation Allowance.**—When men who are on the married roll are unavoidably separated from their families owing to the exigencies of the service, separation allowance will be issued to their wives and families.

14. When in hospital on account of wounds or sickness contracted on field service, or injuries on military duty, free medical treatment is provided. In other circumstances a stoppage of 7d. a day is made for each day in hospital, but in cases of sickness caused by military service one-half the stoppage may be remitted.

15. When transferred to the Army Reserve a soldier of the Corps will receive annually a reserve gratuity of £10 in lieu of reserve pay.

If, while serving in the Army Reserve, he is placed on the First Reserve of the Royal Flying Corps as a flyer, he will receive a further annual gratuity of £10 subject to his performing a quarterly flying test.

16. Warrant officers, non-commissioned officers and men of the Royal Flying Corps discharged on account of injuries received on flying duty, will be eligible for pensions under the conditions, and at the rate laid down for their respective ranks, in the Pay Warrant in the case of men discharged for wounds received in action.

17. In the event of the death of a soldier within seven years as the result of injuries so received, pensions and compassionate allowances may similarly be awarded to the widow and children of a warrant officer, non-commissioned officer or man.



Mr. McClean Flies Over Dover Harbour.

WHILE the naval pilots stopped at Ramsgate on the 30th ult., Mr. F. K. McClean, on his Short Tractor biplane, took a passenger on to Dover, and at a height of about 2,000 ft. circled over Dover Castle and the National Harbour, returning to Eastchurch without alighting after a trip of an hour and a-half.



Mr. Frank McClean in the pilot's seat of his 70-h.p. Short tractor machine, with Miss McClean as passenger, prior to a flight at Eastchurch.

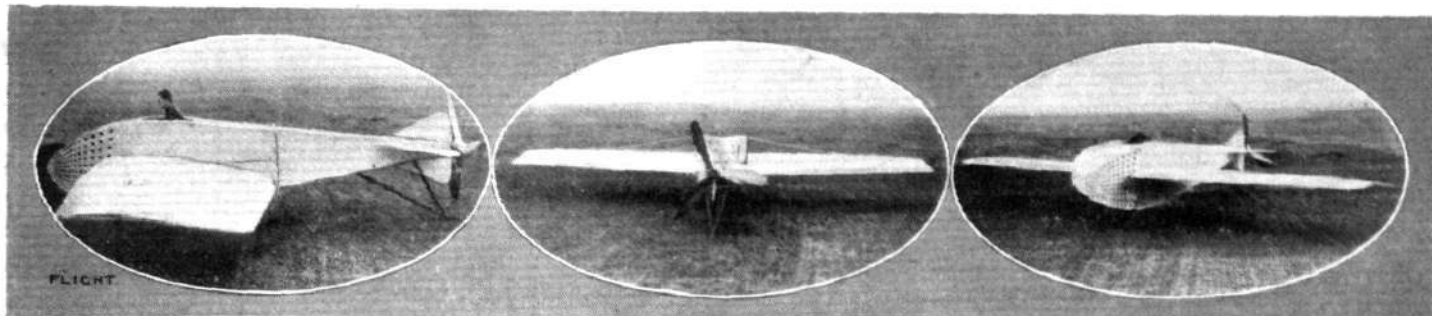
A.C. OF AMERICA AERO SHOW.

By LIEUT. GUY HILHOUSE, R.N.

THE first Annual Aero Show, held at Grand Central Palace, New York, under the auspices of the Aero Club of America from May 9th to 18th was a great public success, but to the seasoned aviator there were only a few features of marked novelty and importance. Generally speaking all the models shown, which were made in this

and the radiators are now placed behind the engines instead of in front.

A splendidly made Wright 6-cylinder water-cooled, 50-55-h.p. engine of new design is shown. It is based on the designs of the older models, with the usual vertical cylinders one behind the



Three views of the Gallaudet racing monoplane, which has a 3-bladed propeller at the rear. The wings are 32 ft. span, and they have a chord of 8 ft. Wing-warping is fitted, the mechanism being built into the planes.

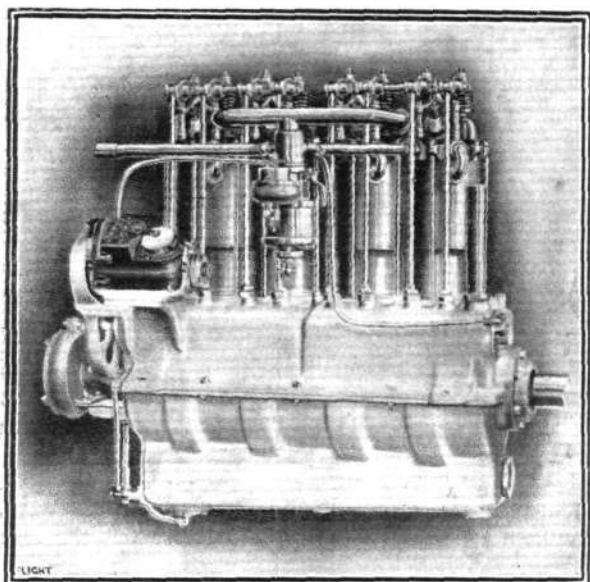
country, were exceedingly well constructed, but with one exception there was no originality of design either in engines or craft.

The ballooning side of aeronautics was almost neglected and there was, too, a noticeable absence of an accessories section. Hydro-aeroplaning is going to become a big thing in this country as a

other, but has a half-inch longer stroke, the new engine being 4½ by 4½. It weighs 230 lbs. and develops 50-h.p. at 1,150 revs. A noticeable new feature is the water-cooled heads, so that a muffler can be fitted.

The workmanship and finish are up to the usual high standard of the firm and the cost is £375. No bench test of any duration has yet been made with this model.

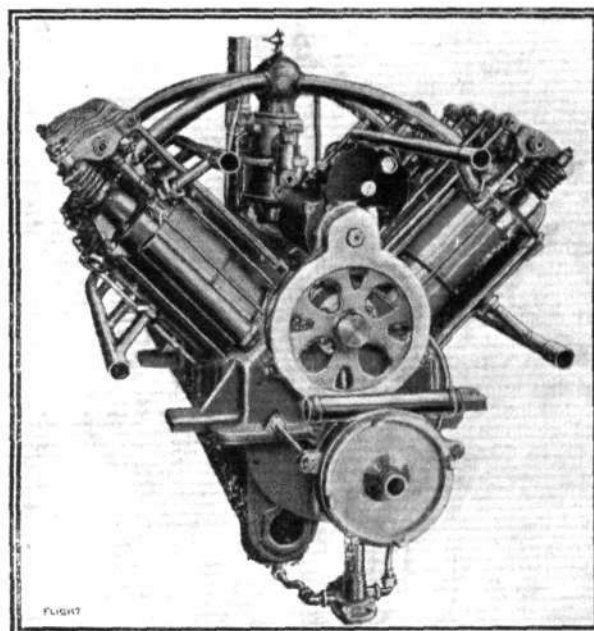
For some time the Wrights have concentrated their genius on



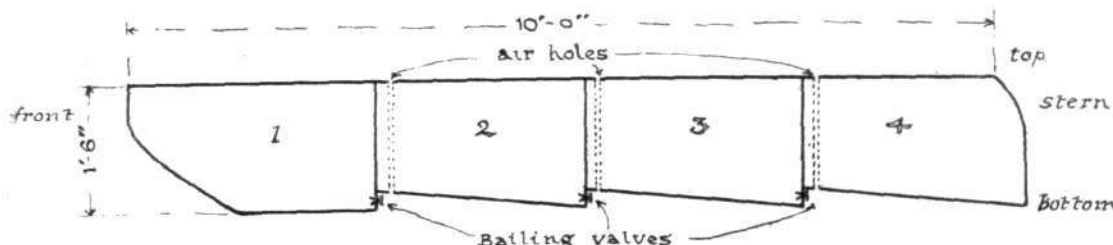
THE 40-H.P. 4-CYL. HALL-SCOTT AEROPLANE MOTOR.—This is also of the water-cooled type, and the cylinders are 4 ins. bore and 5 ins. stroke.

pleasure sport, and both the Wright and Curtiss firms are going to develop it almost exclusively.

The first stand one naturally turns to is that of the Wright brothers. There is not much difference in their new model biplane excepting that the horizontal stern rudder is slightly wider. The vertical box rudders now come well above the horizontal members

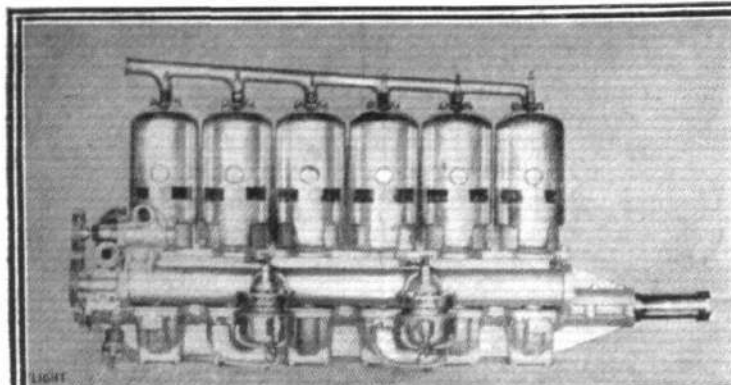


The 60-h.p. V-type Hall-Scott motor at the New York Show. It is of the water-cooled type, and the eight cylinders are 4 ins. bore by 4 ins. stroke. The water-jackets are of steel.

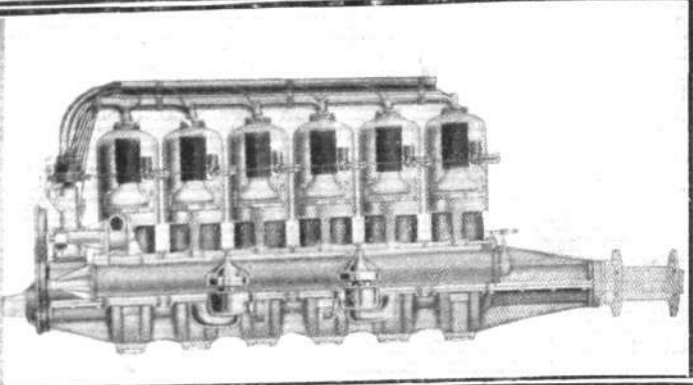


Section of the Wright hydroplane for attachment to the Wright aeroplane. It is made of spruce and canvas, measures 20 ins. wide, and weighs 60 lbs. Two such pontoons, each divided into four watertight compartments, are used on each machine.

designing an efficient pontoon for hydro-aeroplane work and have now evolved a very satisfactory model. The weight is only 60 lbs., it is exceedingly strong, very buoyant indeed and its rough measurements are 10 ft. long, 20 ins. wide and 18 ins. deep. It is made of spruce and lined inside with canvas and strengthened with strong wood cross-pieces. It has four water-tight compartments. Two special features



The Roberts 75-h.p. 6-cyl. motor, which weighs 240 lbs., as shown. The cylinders are 4½ ins. bore by 5 ins. stroke. It is of the two-stroke-cycle type.



The Roberts 125-h.p. 6-cyl. Motor.—This is also of the two-stroke-cycle type, and the cylinders are 5½ ins. bore and 6 ins. stroke.

are the air suction holes and the "bailing valves." The Wright machines are fitted with two pontoons for hydro-aeroplaneing.

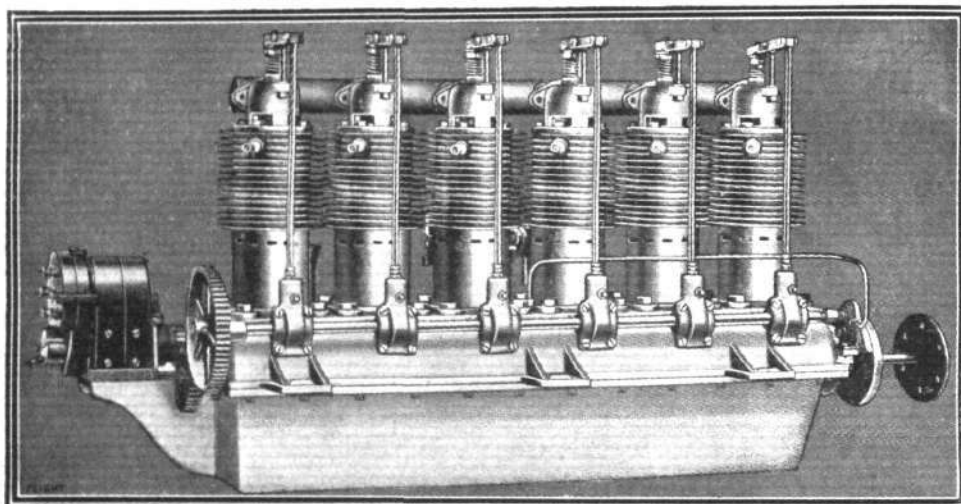
As one of the foremost aviators and the pioneer of hydro-aeroplaneing in America, Glen Curtiss has carved a niche for himself. There are no new alterations of importance in his well-known type of biplane or his two well-known 4 and 8-cylinder engines. For hydro-aeroplaneing the biplane is fitted with the old pattern front-lifting planes to counteract the weight of the pontoon—which weighs as much as 155 lbs. A standard 8-cylinder engine was exhibited. It has the same 4-in. cylinders and 5-in. stroke and develops 75-h.p. at 1,100 revs. The weight is 285 lbs. and on a six hours' bench trial at 1,225 revs. developed 85-h.p., the petrol consumption working out at ¾ pint per h.p. The same E 1 Arco radiators are used and Mr. Curtiss says he has never met their equal for aero purposes.

Curtiss machines are fitted with a single pontoon and two side-wing aluminium cylinders for hydro-aeroplaneing.

Perhaps the most interesting exhibit is an entirely new and novel design Gallaudet monoplane, which although not yet perfected, has had several trials. It is fitted with a 14-cylinder, 120-h.p. Gnome, and has frequently attained a speed of 105 miles per hour. It was built and designed by two brothers, Gallaudet, at Norwich, Connecticut, and is of great strength. A hollow Vanadium steel tube of 3½ in. diameter, and ⅞ in. thick runs clear through the centre of each wing and right across the fuselage. In addition, the wings are exceptionally strongly stayed against upward or downward pressures. There is an original device for altering the angle of incidence of the wings from the driver's seat, so variable speed can be obtained with an even keel. The whole landing chassis body and fuselage are built up of hollow 3 per cent. nickel-steel tubing, and are entirely enclosed with sheer aluminium and silk covering. The Gnome engine is in the usual place in front, but a 3-bladed "Paragon" propeller is placed right behind the stern rudders giving the whole machine a flying-fish-like appearance. Lateral balance is secured by warping, the arrangement being inside the wing and controlled through pedals, or it may be left to the automatic action of the cross-connections and the machine's fundamental stability, the tail and the rudder are operated by a single hand lever. All machines are designed to carry two persons and have double controls, and the whole machine is built of steel.

It will take part in the Gordon Bennett race at Chicago this year, which experts here confidently assert it will win. Another interesting exhibit is a new 7-cylinder rotary engine, built by the Twombly Co., which is a very near copy of a Gnome. The model shown develops 70-h.p. at 1,000 revs. and only weighs 100 lbs. On a bench test it averaged 1,298 revs. for three hours developing nearly 60-h.p., the petrol consumption working out at ⅞ pint per h.p. per hour. A circular muffler will always be fitted with the engine. The cylinders are made of nickel-chrome steel, each cylinder being solid drawn from a heavy billet weighing over 30 lbs. and after completion each cylinder weighs 4½ lbs.

The first standard design biplane for the U.S. army, built by the Burgess Wright Co. is shown. It is so much like an Avro that a further description is unnecessary. It is fitted with a 8-cylinder air-cooled Renault. There are two seats, one behind the other, each with a separate control. A wireless telegraphy apparatus,



A 50-h.p. 6-cyl. air-cooled motor—known as the Grey Eagle—exhibited at the New York Show by Messrs. R. O. Rubel, Jr., and Co. The cylinders are 4 ins. bore by 4½ ins. stroke, and complete with magneto, carburettor, and lubricator, the motor weighs 269 lbs.

compass, map boxes, &c., are fitted; the model shown is very well and strongly made.

Both the Curtiss hydro-aeroplanes and Wrights' biplane at the show are covered with "Luminal" cloth, which is covered with aluminium paint by a secret process. It is waterproof, and is manufactured by the Goodrich Tyre Co., of Akron, Ohio.

Weight	Tensile strength per sq. in.		
per sq. yard.	Warp.	Filling.	Width.
64—6½ ozs.	85 lbs.	95 lbs.	37½ ins.
7½—7¾ "	115 "	125 "	39½ "

Altogether there were 20 aeroplanes shown, but outside the features already recorded there was nothing else of note. Other exhibits included Roberts' aero motor engines, Rex monoplane which resemble the Blériot, Hall-Scott aviation motors (4 and 8-cylinder), and the Grey Eagle motor.



Mr. Hamel's Seventh Cross-Channel Trip.

HAVING taken delivery on May 30th of the new 50-h.p. Gnome-Blériot, which he proposes to use in the Circuit of London to-day, Mr. Gustav Hamel quite naturally decided to fly it from Hardelot, near Boulogne, to Hendon. Starting off at two minutes past one and rising to a height of about 2,500 ft. he made a quick trip across the Channel to Dover. At Eastchurch he determined to break his journey where he landed at 2.10. A thick fog prevented an immediate restart for London, but at 5.5 he was under way again and after an hour's journey arrived safely at Hendon.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

The King's Patronage.

The Chairman, Sir Chas. D. Rose, Bart., M.P., has received a notification from the Right Hon. Sir William H. P. Carington, G.C.V.O., C.B., P.C., the Keeper of the King's Privy Purse, that His Majesty The King has been graciously pleased to become Patron of the Royal Aero Club.

Committee Meeting.

A meeting of the Committee was held on Tuesday, the 4th inst., when there were present:—Sir Charles D. Rose, Bart., M.P., in the Chair, Mr. Griffith Brewer, Col. J. E. Capper, C.B., R.E., Mr. G. B. Cockburn, Capt. Bertram Dickson, R.F.A., Capt. J. D. B. Fulton, R.F.A., Col. H. C. L. Holden, C.B., F.R.S., Prof. A. K. Huntington, Mr. F. K. McClean, Mr. Alec Ogilvie, Mr. C. F. Pollock, Mr. R. W. Wallace, K.C., and the Secretary.

The Late Mr. Wilbur Wright.—The Chairman, before proceeding with the business of the meeting, referred to the deplorable loss to the science of aviation sustained by the death of Mr. Wilbur Wright. He reported that immediately on receipt of the sad news he had dispatched the following cablegram to Mr. Orville Wright:—

"The Members of the Royal Aero Club have received with great sorrow the sad news, and desire to tender you most heartfelt sympathies."

He had also cabled as follows to the Aero Club of America:—

"The Committee of the Royal Aero Club desires to express its deepest regret at the loss of Wilbur Wright and its high appreciation of his eminent and unrivalled work in aviation."

The Chairman's action was unanimously approved and confirmed. On behalf of the members of the club Lord Montagu, a member of the Club's Council, sent a wreath to the funeral from New York.

New Members.—The following new members were elected:—Major P. N. Buckley, Andre Marcel Desoutter, William Hugh Ewen, Samuel Jordan Gillchrest, Robert Leicester Harmsworth, M.P., Richard Heyne, O. F. Odell, Andrew Mitchell Ramsay, Sir John C. E. Shelley, Bart, and Frederick Hornsby Wright. Total membership to date 1,375.

Aviators' Certificates.—The following aviators' certificates were granted:—

- 218. Henry Charles Biard (Howard Wright Biplane, Hendon).
- 219. Hugh Percy Nesham (Bristol Biplane, Brooklands).
- 220. Charles Lindsay Campbell (Bristol Biplane, Salisbury).
- 221. Francis Henry Fowler (Howard Wright Biplane, Hendon).
- 222. Thomas O'Brien Hubbard (Howard Wright Biplane, Hendon).
- 223. Montagu Righton Nevill Jennings (Bristol Biplane, Salisbury).
- 224. Alphonse Potet (French subject) (Blériot Monoplane, Hendon).
- (Subject to sanction Aero Club de France).
- 225. Richard T. Gates (Howard Wright Biplane, Hendon).
- 226. Lieut. David Percival, R.G.A. (Bristol Biplane, Salisbury).
- 227. 2nd-Corporal Frank Ridd, R.E. (Bristol Biplane, Salisbury).
- 228. Lieut. Leonard Dawes (Bristol Biplane, Salisbury).
- 229. Lieut. J. N. Fletcher, R.E. (Cody Biplane, Laffans Plain).
- 230. Lieut. Baron Trevenen James, R.E. (Howard Wright Biplane, Hendon).
- 231. Marcus Dyce Manton (Howard Wright Biplane, Hendon).

British Manufacturers' Sub-Committee.—Prof. A. K. Huntington reported on the meeting of the manufacturers held on May 22nd, 1912. The proposals for the formation of a sub-committee were approved, and it was resolved that the matter be proceeded with.

Public Safety and Accidents Investigation Committee.—On the motion of Col. H. C. L. Holden the following report of this Committee was unanimously adopted:—Meetings were held on the 7th, 21st, 22nd and 28th May, 1912, when there were present:—Col. H. C. L. Holden, C.B., F.R.S., in the chair, Mr. A. E. Berriman, Mr. G. B. Cockburn, Capt. J. B. D. Fulton, R.F.A., Mr. F. K. McClean, Mr. W. O. Manning, Mr. Alec Ogilvie, Mr. Mervyn O'Gorman, Sir Charles D. Rose, Bart, M.P., Major-General R. M. Ruck, R.E., Staff-Surgeon H. V. Wells, R.N., and the Secretary.

APPOINTMENT OF OFFICIAL REPRESENTATIVES.—It was decided to appoint Club Representatives at the various centres to enquire into and report on all accidents.

The following have so far been appointed:—

Eastchurch—Mr. F. K. McClean, Mr. Alec Ogilvie, and Com. C. R. Samson, R.N.

Salisbury—Mr. G. B. Cockburn, Capt. J. D. B. Fulton, R.F.A., and Capt. E. L. Gerrard, R.M.L.I.

Brooklands—Mr. W. O. Manning and Mr. R. L. Charteris.

Hendon—Mr. C. Grahame-White, Mr. H. Barber, and Mr. R. T. Gates.

Manchester—Mr. P. B. Murray, Mr. J. B. Butler, and Mr. E. A. Pochin.

Freshfield—Mr. G. Higginbotham.

BROOKLANDS ACCIDENT.—Report on the fatal accident to Mr. E. V. B. Fisher and his passenger, Mr. Victor Mason, when flying at Brooklands on Monday, May 13th, 1912, at about 6 p.m.

Brief Description of the Accident.—Mr. E. V. B. Fisher flying with a passenger on a Flanders monoplane fitted with a 60-h.p. Green engine had made two or three circuits of the Brooklands flying ground. He was making a left-hand turn when the aircraft fell to the ground, killing both the aviator and passenger. Almost immediately after contact with the ground, the aircraft was in flames.

Report.—The Special Committee sat on the following dates:—Tuesday, May 21st, Wednesday, May 22nd, and Tuesday, May 28th, 1912, and heard the evidence of two eye witnesses, both of whom were aviators holding certificates. The Committee also heard the evidence of the designer and manufacturer of the aircraft, and of the representative of the maker of the motor. The written reports of other witnesses, and the report of Dr. Eric Gardner, were also considered.

From the consideration of this evidence the Committee is of opinion that the following facts are clearly established:—

(1) That the accident originated while the aircraft was making a left-hand turn at about 100 feet from the ground. (Evidence as to height, in the opinion of the Committee, is not conclusive.)

(2) That the aircraft had turned through an angle of about 90° in the horizontal plane.

(3) That it then side-slipped inwards.

(4) That it struck the ground head first, with the tail practically vertical.

(5) That from the effect produced on the engine and other parts the velocity at the moment of striking the ground was very considerable.

(6) That the fire which took place originated subsequently to the fall, and was the result not the cause of the accident.

(7) That there is no reason to suppose that the structural failure of any part of the aircraft was the cause of the accident.

(8) That from the commencement of the flight the aircraft was flying tail down.

(9) That the engine was actually running when the aircraft struck the ground.

(10) That Mr. Fisher was not in any way incapacitated so far as the normal control of the aircraft was concerned by an injury to his left shoulder, which he had sustained on April 18th, 1912.

(11) That the passenger did not cause the accident.

(12) That Mr. Fisher was thrown, fell, or jumped out of the aircraft when the latter was a considerable height from the ground, his body being found about 60 ft. in front of the spot where the aircraft struck. The passenger remained in the aircraft: his position was such that he could not readily have been thrown out.

(13) Mr. Fisher was granted his Aviator's Certificate No. 77, on May 2nd, 1911, by the Royal Aero Club.

Opinion.—The Committee is of opinion that the cause of the accident was the aviator himself, who failed sufficiently to appreciate the dangerous conditions under which he was making the turn, when the aircraft was flying tail down, and in addition was not flying in a proper manner.

A side slip occurred, and Mr. Fisher lost control of the aircraft.

It seems probable that his losing control was caused by his being thrown forward on to the elevating gear, thereby moving this forward involuntarily, which would have had the effect of still further turning the aircraft down. This would explain his being thrown out whilst in the air.

In the opinion of the Committee it is possible that if the aviator had been suitably strapped into his seat he might have retained control of the aircraft.

It was unanimously resolved that this Report be forwarded to the Committee with a recommendation that it be published in extenso.

NOTICES TO FLYING GROUNDS.—The draft notice was considered and approved.

WITNESS REPORT FORM.—The draft report form was considered and approved.

SALISBURY ACCIDENT.—This accident is now being investigated by the Committee.

Competitions Committee.—On the motion of Col. H. C. Holden, the following report of this Committee was unanimously adopted:—

Meeting of Competitions Committee, held at the Royal Automobile Club, Pall Mall, S.W., on Tuesday, the 21st May, 1912, at 8 o'clock.

Present: Col. H. C. L. Holden, C.B., F.R.S. (in the Chair), Mr. Ernest C. Bucknall, Mr. G. B. Cockburn, Prof. A. K. Huntington, Major F. Lindsay Lloyd, Mr. F. K. McClean, Mr. J. T. C. Moore-Brabazon, Mr. Norman Clark, Mr. Alec Ogilvie, Mr. Mervyn O'Gorman, Mr. E. V. Sassoon and Secretary.

Minutes.—Minutes of Meetings held on the 7th and 14th May, 1912, were read, confirmed, and signed.

COMPETITION RULES.—(Regulations for preventing collisions in the air. Flying grounds.)

Rule 11, paragraph (e), was again considered, and it was resolved to recommend that the rule be altered as follows:—

(e) Any aircraft overtaking another aircraft is responsible for keeping clear, and in no case must turn in across the bows of the other aircraft after passing it so as to foul it or risk a collision, and must in addition, subject to rule 12, conform to the following regulations:—

(1) If flying on the same level, *i.e.*, within 5 metres above or below, must pass outside the overtaken aircraft at not less than 10 metres.

(2) If on a different level, must not pass nearer than 10 metres.

The distance shall be taken between the nearest adjacent points of the respective aircraft.

An aircraft when being overtaken shall not alter its course or level, save when in the act of overtaking and passing another aircraft.

12. Any competitor driving so as to influence another driver's aircraft in a dangerous manner shall be considered to have committed an offence under these rules.

INTERNATIONAL CORRESPONDENCE SCHOOLS.—Correspondence from the International Correspondence Schools with reference to their offer of a prize of £100 to the first of their pupils to fly one mile, was read. It was decided to recommend that the prize be equally divided between the two pupils should they both succeed in obtaining an aviator's certificate on or before the 1st July, 1912. Should only one pupil have obtained the certificate by this date then such pupil should receive the whole prize.

The secretary informed the committee that the prize-money had been deposited with the Club.

Balloon Committee.—On the motion of Mr. C. F. Pollock, the following report of this Committee was unanimously adopted:—

Meeting of Balloon Committee, held at 166, Piccadilly, London, W., on Tuesday, May 14, 1912, at 4 o'clock.

Present: Mr. John Dunville (in the Chair), Mr. Griffith Brewer, Mr. C. F. Pollock, Mr. Roger W. Wallace, K.C., and Secretary.

HURLINGHAM BALLOON CONTESTS.—The following Balloon Races were fixed for Hurlingham for this season:—

Wednesday, June 12th ... Point-to-Point Race for Cup offered by Mr. John Dunville.

Saturday, June 22nd ... Long Distance Race for the Hedges-Butler Challenge Cup.

Saturday, July 13th ... Long Distance Race for a Cup presented by Mr. A. Mortimer Singer.

A hearty vote of thanks was passed to Mr. John Dunville and Mr. A. Mortimer Singer for their kind offers of prizes.

Commission on the Law of the Air.

The Special Commission of the Fédération Aéronautique Internationale met in Brussels, May 17th and 18th, 1912, and it was attended by delegates from thirteen countries. Mr. Roger W. Wallace, K.C., and Mr. Griffith Brewer attended on behalf of the

Royal Aero Club, representing Great Britain. Amongst the subjects under discussion were the conditions of international aerial circulation, customs, regulations for aerial navigation, lights, signals, passing and manœuvring, &c. The report of this Commission will be laid before the annual conference of the Fédération Aéronautique Internationale to be held in Vienna on June 20th, 1912.

General Committee.

A meeting of the General Committee of the Royal Aero Club, which includes representatives of the associated clubs, will be held at 166, Piccadilly, London, W., on Tuesday, June 11th, 1912, at 5 o'clock, at which the questions to be brought up at the Conference of the Fédération Aéronautique Internationale, to be held at Vienna, on June 20th, 1912, will be considered, and delegates appointed.

The following clubs, associated with the Royal Aero Club, have been invited to attend:—Scottish Aeronautical Society, Aero Club of Ireland, Bristol and West of England Aero Club, East Riding Aero Club, Manchester Aero Club, Dover Aero Club, Yorkshire Aero Club, North Eastern Aero Club, and Aeronautical Society of South Africa.

"Point-to-Point" Balloon Race at Hurlingham.

The Point-to-Point Race, for the Cup presented by Mr. John D. Dunville, will take place at the Hurlingham Club, Fulham, S.W., on Wednesday, the 12th inst. It is expected that eight balloons will take part.

Members of the Royal Aero Club will be admitted to the Hurlingham Club free, on presentation of their Royal Aero Club membership cards.

Members of the Royal Aero Club can obtain special vouchers for the admission of their friends, who are not members of the Royal Aero Club, to Hurlingham, from the secretary of the Royal Aero Club. These vouchers will admit on payment at the entrance gates.

Austrian International Aviation Meeting.

The Aero Club of Austria has organised an International Aviation Meeting to take place at the Aerodrome d'Aspern, Vienna, from June 23rd to 30th, 1912.

175,000 Austrian crowns (approximately £7,300) are offered in prizes for the following events:—Speed, height, vertical speed, distance, duration, variable speed, landing, circular flight, bomb dropping, &c.

Entries, accompanied by an entry fee of 300 crowns (£12) will be received by the Aero Club of Austria, Tuchlauben 3, Vienna I, up to June 8th, 1912. After this date the entry fee will be 500 crowns (£20), the closing date being June 15th, 1912. The entry fee will be returned to all aviators who make a flight of at least 30 minutes duration.

Rules and entry forms can be had on application to the Royal Aero Club.

Belgian Hydro-Aeroplane Meeting.

An International Hydro-Aeroplane Meeting will take place at Tamise, on the Escaut, Belgium, from September 1st to 9th next.

The meeting is being arranged by the Aero Club of Belgium, and will be held under the patronage of H.M. The King of the Belgians and under the auspices of the Belgian Colonial Office.

The purpose of the competition is to test the capabilities of hydro-aeroplanes, with a view to their utilisation in the Belgian Congo.

The prize fund now amounts to 30,000 francs, and the meeting will comprise the following competitions:—

1. Total aggregate duration.
2. Quickest get-off with the stream.
3. Quickest get off against the stream.
4. Longest distance without alighting.
5. Ease in steering.

Each machine must carry one passenger in addition to the pilot, and extra points will be awarded for additional passengers. Points will also be allowed for certain mechanical details.

Entries should be sent in to the Aero Club of Belgium, 6, Avenue Marnix, Brussels.

166, Piccadilly.

HAROLD E. PERRIN, Secretary.

WILBUR WRIGHT. Died May 30th, 1912.

Death, e'er a vandal indiscriminate,
Shatters the living fabrics which enshrine
The noblest intellects: insatiate,
Lays in low ruin Heaven's best design.
E'en as a reaper, hasty in his greed,
Gath'ring an unripe harvest through his fears
Of loss, he plies untimely scythe with speed
That brings him naught save green and unfilled ears.

But e'en the reaper's rude and thoughtless haste
Has failed to hide the promise of the grain;
Though Death sees fit still-unrun years to waste,
The triumphs of the splendid past remain.
Now he, who's genius, backed by untired will,
Turned into deed men's yearning dreams of flight,
Freed from earth's shackles, wings his own last course
Into the Unknown—up toward the Light.

June 1st, 1912.

DOUGLAS A. SMART.

FROM THE BRITISH FLYING GROUNDS.

Brooklands Aerodrome.

ON the morning of Wednesday the 29th ult., there were several hours of excellent flying weather, all schools putting in considerable work. On the little Dep. racer Lieut. Fox made several flights totalling half-an-hour, while Capt. Dawes put in some rolling and finished with an erratic straight. Gill also flew for 10 mins.

At the Sopwith school Raynham was out with Howell, Herbert, Powell and Hedley, the latter doing good straights and then a circuit. Parke on the Avro made a short solo, handing machine over to Darracq for straights. Kemp made a fine flight on Darracq's Farman, getting well away from the track over the surrounding country at 800 ft. On Vickers No. 3 Capt. Darbyshire did some promising rolling.

In the evening Hotchkiss was up with Holyoake and Wilmer, a new pupil and Capt. Becke on the same machine did several circuits. Arthur on the monoplane attempted a circuit with the engine running badly, and was consequently brought down in the bad ground by the river. After a very severe bouncing the machine came out undamaged and was rolled home. Parke was out for a short solo on the Avro, and then Darracq and Charlton did good and steady straights. Capt. Darbyshire continued rolling on the Vickers, and the Deperdussin taxi was being rolled. Fox made a short flight on the racer. On Sopwith's Farman Raynham was early at work with Howell, Herbert and Webb-Bowen, who were all doing well in the pilot's seat. On the same machine Sopwith took Miss Morrill for a trip towards Chertsey, and in the late evening did several circuits with two passengers and a short flight with three. During the day the new military Avro was out for engine tests. It is almost identical with one delivered by Parke to Farnborough some weeks back, and by the time this appears will probably have passed its tests.

On Thursday morning, Raynham was flying for 2½ hours with Messrs. Hedley, Herbert, Webb-Bowen, and Powell, all showing good progress. The Avro was first out with Parke testing, and then with Darracq and Charlton. On the Bristol Becke made some good figure eights. Hotchkiss gave tuition to Holyoake and Wilmer, the morning's work being stopped by a broken tappet-rod of the Gnome. In the evening the Avro was being flown straights by Charlton and Darracq, the latter narrowly escaping a "discontinuation" through getting into the backwash of the Vickers, which was also doing straights with Knight and Hunter alternately. Hotchkiss was out for a short solo on the Bristol, while Raynham put in another 2½ hours' tuition work. After flying was over for the day he put the Farman to rather a novel use by taking Capt. Herbert back to

dinner at the Weybridge Golf Club, landing on the links, and returning in the dusk. The Deperdussin was up for a few circuits, and then Brooke-Popham made a short trial, but had to give up owing to slight damage to chassis while landing.

On Friday morning Hotchkiss was up with Holyoake and Becke. Bulkeley did some good straights; Darbyshire also did some straights on the Vickers monoplane No. 3. Arthur was up for one circuit on the Bristol-Anzani monoplane. Raynham was up for many trips with pupils, finishing by giving Herbert a lift to the Golf Club for breakfast. About 11 a.m. there was a short lull, during which Arthur made his first trial on the Bristol two-seater monoplane, putting up an excellent show with perfect landings. Raynham was also out with pupils, as also was the Avro with Charlton, who during a straight up the wrong side of the ground got over the Sewage farm, and after steering clear made a bad landing on the good ground beyond, breaking a wing tip and slightly damaging the chassis. In the afternoon Raynham did a circuit in a bad wind, and in the evening was up with Wadden, Herbert and Webb-Bowen. Hedley did some straights solo. Hotchkiss was up for several circuits with Waldron on the Bristol. Bulkeley made several straights and Becke some circuits in a choppy wind. Both Hunter and Knight did straights on the Vickers.

On Saturday early, Gill flew the Dep. racer for some 20 mins. and Dawes did some straights. Kemp, on Darracq's Farman, made a 30-min. flight, during which he kept away over Addlestone and Weybridge. Raynham put in a lot of flying with pupils, and again transported Herbert to breakfast at the Golf Club. Arthur afforded considerable excitement on the Bristol monoplane by missing the track and trees at the Byfleet end by a few feet, after a bad landing, and then going for a cross-country tour round Byfleet, finally landing without damage but with many bumps. Hotchkiss, on the biplane, took round Holyoake, and Becke went for a short flight. In the afternoon Raynham was first out solo, and then with passengers, and Wadden, a pupil. After tea the Bristol and Vickers were both out with pupils until the wind stopped proceedings. Raynham did one more circuit in bad wind and rain, which finished flying for the day.

On Sunday morning rain stopped all flying. In the afternoon Raynham made several trips in bad wind, while later Hotchkiss did a few short flights, and Bell made a fine flight on the Bristol monoplane about 600 feet up. In the late evening, Hotchkiss and Raynham were both up with pupils, while Arthur put up a really fine performance on the Bristol monoplane—going out over Weybridge and Chertsey at 2,000 feet, finishing up with a perfect landing in the dusk. This flight, however, was hardly appreciated by those on the ground, who happened to know he had a very limited supply of petrol on board, having been sent out in the first place to do straights.

On Monday a thick fog prevented much flying until close on breakfast time. Hotchkiss made a short trial, and Darbyshire on the Vickers was making good straights. Raynham, after several trips solo in the fog, was at work with pupils until the wind rose. In the evening the wind remained high, the only flying done being by Raynham, who made a short trial.

On Tuesday morning wind and rain stopped all flying.

Filey School (Blackburn Aeroplane Co.).

MONDAY last week, Brereton was giving further exhibition flights. He made some fine circuits in the Bay, doing figure eights over the sea. Later on in the day several passengers were carried.

He was again in the air Tuesday, doing excellent flights, Scott also putting in straights, flying very steadily and landing with ease.

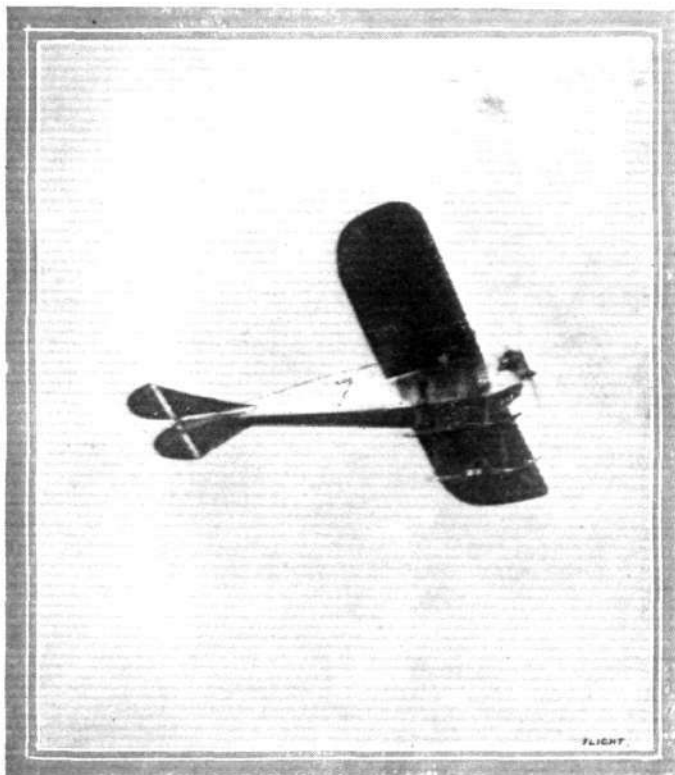
Wednesday, Brereton was up by 7 o'clock, making a 5 mile circuit in Filey Bay, and then striking inland with the intention of flying to Leeds. At 7.25 he landed at Malton, 22 miles away, owing to slight engine troubles. The motor stopped when he was at an altitude of 2,000 ft., and Brereton made a very fine glide, landing without mishap.

Freshfield, Lancs.

A CONSIDERABLE amount of flying has been done by the Mersey all-British monoplane during the last fortnight, especially during the holidays. On the Saturday, visitors to the hangars, including three ladies, Misses Oliver, Harwood and Rivett, were given flights, and afterwards Fenwick took Swaby over to Southport to visit the Southport aviators. Finding everything closed they did not alight, but turned inland, eventually circling over the Altcar rifle range, then returning to Freshfield.

On the Sunday, Captain Dick, who had seen the machine the previous day, was given a 16-mile cross-country flight, in spite of a 25-mile wind.

On Tuesday, Fenwick and Swaby landed at Southport, the machine becoming the object of much interest, and incidentally



The Vickers monoplane, with Mr. C. MacDonald at the wheel, flying in a cross-country handicap at Brooklands at Whitsun.

ruining a political meeting, audience and reporters promptly abandoning politics for aviation. Several flights were given to personal friends, and the machine then returned to Freshfield. The return journey only occupied 6 mins.

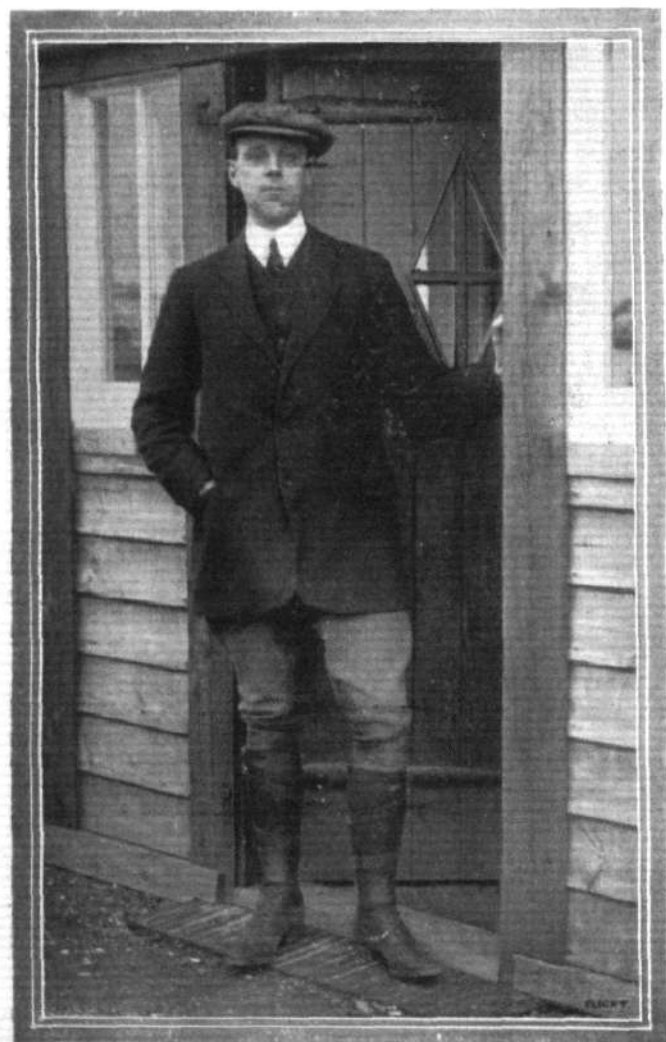
Friday, last week there was a severe thunderstorm, but it cleared up towards 7 o'clock and the wind dropped. Mr. Higginbotham then went out for about 6 miles, and got the propeller chipped while running over the wet sand. Saturday was fine, and King brought out his Farman, but just after starting the motor a dog decided to assist, resulting in the propeller being broken and the planes damaged. Mr. Higginbotham made a flight to Amsdale and back, but it was a very rough passage, as the wind was from the East over the sand hills, so he decided return to *terra firma*.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Monday morning, last week, calm weather prevailed, so the pupils were out for monoplane practice. Mrs. Stocks and Capt. Salmond were busy from 5.45 a.m., both doing well on 25-h.p. machine. In evening too gusty for school work.

Another calm morning and evening on Tuesday, and a good day's school work was possible. In all 28 lessons given, work continuing from 3.15 to 6.4 a.m., and 4.30 to 8.30 p.m. Mr. Lewis Turner up with Capt. Salmond and Baroness Schenk as passengers on the Howard Wright, and M. Noel giving instruction on Farman to Messrs. Poupell, Manton and Kershaw, while Mrs. Stocks and Capt. Salmond and Nicholas practised on the 25-h.p. Blériot. Morning's work finished by latter who (with assistance of pupil of another school) succeeded in smashing two 25-h.p. Blériots in collision. In the afternoon Messrs. Wynne, Rathborne and Scully rolling, Messrs. Kershaw and Morris doing straights and Mr. Manton circuits, all on school bus, the Howard Wright being in dry dock owing to engine trouble.

On Wednesday morning, M. Noel, in passenger seat, teaching control to Messrs. Fuller and Rathborne, Messrs. Kershaw, Morris,



Mr. Richard T. Gates, the manager of the London Aerodrome, Hendon, who last week took his Royal Aero Club pilot's certificate.

and Roupell doing circuits on Farman. Mrs. Stocks making excellent circuits on the 35-h.p. Blériot, followed by Capt. Salmond, who had the misfortune to bounce and pancake after a bad landing, completely wrecking the front of the machine. In evening, nothing till dusk, when Howard Wright out for engine test, after which engine refused to fire till 9.45 p.m. However, a patient passenger had been waiting meanwhile, so Mr. Lewis Turner took him up, petrol being poured on the ground and fired as some sort of a guide to landing, as there was no moon.

Air was calm but rocky on Friday, *remous* everywhere. At Grahame-White School in morning, Messrs. Norris and Roupell flying circuits, Messrs. Wynne and Rathborne straights, after which, Mr. Lewis Turner brought out the Howard Wright to test its engine. In the evening, Messrs. Scully, Wynne, Rathborne and Manton doing straights with instructor, and Messrs. Manton, Norris, Roupell, and Kershaw circuits on the Farman. Baroness Schenk doing straights with Mr. Turner, and Lieut. James doing straights and circuits on the Howard Wright.

Mr. Morris on Saturday morning made some excellent circuits on Farman, after which school suspended while Mr. Manton and Lieut. James got their *brevets*, both in excellent style. The latter, it may be mentioned, was ready for his *brevet* after only four days' tuition, but his first attempt on it was spoiled by the failure of his engine. In evening no school work owing to meeting.

Sunday was calm in morning, which Grahame-White school devoted to the less advanced pupils. Messrs. Rathborne and Carr and Capt. Salmond doing straights with M. Noel, while Mr. Lewis Turner took charge of Baroness Schenk on the Howard Wright.

Blériot School.—Monday, last week, weather was too rough for school work. Next day many of the pupils were at the aerodrome by 5 a.m., but owing to heavy ground mist, it was impossible to commence school work until 6 a.m., when weather was perfect until 6.45, during which time M. Aubert, who is coming on quite well, flew four straights at a low altitude.

Wednesday, Messrs. Aubert, Hall and Clappen all out practising at 6 a.m.; the former now having been promoted to the *brevet* machine took charge, and going up found he could not make a comfortable landing until he had done three circuits having got up to 120 ft. instead of the 40 ft. advised. Being quite satisfied with this performance he thought he would like to repeat it, but went up again and did one circuit at about 40 ft. which he concluded with a very nice little *vol plané*. Messrs. Hall and Clappen contented themselves with straights meanwhile, Mr. Hall doing four in flight and Mr. Clappen doing two rolls across and back. In the evening Messrs. Hall, Teulade and Clappen were all at exercise, Teulade doing steady straight flights and the others good straights along the ground. Mr. Crawshaw was meanwhile on his 50-h.p. Gnome-Blériot doing a little excursion in the Elstree direction at about 3,000 ft. and landing in his usual excellent style with a fine *vol plané* just in front of his hangar.

M. Aubert opened Thursday's proceedings at about 5 a.m. by taking out the *brevet* machine and doing circuits at about 100 ft., landing very neatly *en vol plané*. Messrs. Hall and Clappen were meanwhile practising straights.

W. H. Ewen School.—On Tuesday, last week at the W. H. Ewen school, Messrs. James Brothers and Edmunds put in excellent rolling practice, while Mr. Apar, Major Skipwith and Captain Chamier were doing straight flights.

On Wednesday, there was a full turnout of pupils and they all excelled themselves.

M. Dubois, on Thursday, was putting in some good practice for his certificate and is now waiting favourable weather to go for his *brevet*. Miss Prentice and Messrs. Apar, Ware, Lawford and Major Skipwith were also out putting in some good rolling and flying practice. Friday at the school was a busy day, all the pupils being out and getting in an immense amount of practice.

Salisbury Plain.

Bristol School.—Bendall first up Monday, giving two tuition flights to Messrs. Lister and Featherstone. Good solos were made by Lieut. Pickles. Mr. Prendergast showed great promise in a solo he made, whilst Lieut. Percival also made two good flights, landing well. Capt. Allen was out for two trips on one of the monoplanes, but landed rather heavily each time. Rising wind prevented further work.

On Tuesday Bendall, after a trial of conditions, gave Mr. Lister a tuition flight, the pupil taking charge of controls. Lieut. Percival carried out a fine solo, completing with figures of eight, and finishing with good landing. Mr. Prendergast also did well in the two flights he made, landing neatly.

Pizey first out in the evening, taking out Mr. Rawson Shaw for about 20 minutes, pupil holding control, and showing excellent progress. Major Boyd Moss was then taken out for what will be his last tuition flight, as he will now start solo work. Mr. Lister was out for useful instruction with Bendall in getting off and landing.

Lieut. Percival successfully passed the tests for his certificate in fine style, observed by Lieut. Reynolds and Mr. Smith Barry. Lieut. Dawes made a clever flight on one of the biplanes, and Lieut. Pickles executed a pretty solo. Lieut. Hartree, who gained his *brevet* at the school a while back, made a trip on biplane No. 65a. Lieut. Fielding and Mr. Smith Barry each made solos on No. 55.

Very little work was possible Wednesday morning, but towards the latter part of the afternoon Pizey ascended with Lieut. Ercole on biplane No. 55, and with Major Boyd Moss on the same machine, Bendall being out giving flights to Lieut. Gallaher, Mr. Lister, and then Major Boyd Moss, Lieuts. Wall, Rawson Shaw, and McArthur. Some really good solos were made by Lieuts. Pickles, Hartree, and Dawes.

Pizey started things on Thursday, ascending with Lieut. Ercole on biplane No. 55, and then going out, testing a new monoplane just received from the works at Filton, afterwards taking up Mr. Bettington for tuition. Lieut. Fielding made a good trip with Mr. Lister, and Lieut. Dawes started out for the tests for his certificate, which he successfully accomplished, his observers being Capt. Loraine and Lieut. Fielding. Lieut. Pickles was out for a solo, and Major Boyd Moss made his first two trips in a creditable manner, landing well in each case. Other solos were made by Mr. Prendergast and by McArthur.

Flying was resumed in the evening, Pizey taking up Lieut. Wall and Mr. Lister, then testing a recently received machine. Bendall was out with Mr. Lister and Lieut. Ercole, while the following made fine flights, and showed good progress, Col. Smeaton, Major Boyd Moss, Lieuts. Fielding and Pickles, and Messrs. Prendergast and Smith Barry. Rising, gusty wind prevented further work.

Friday morning, Pizey was testing one of the new monoplanes recently received from the works, Bendall was giving instructions to Mr. Lister, and Lieut. Ercole, and Lieut. Fielding made a good flight with Mr. Lister; Lieut. Ercole setting out for a solo on one of the monoplanes. Mr. Bettington was flying on similar machine round Fargo and Stonehenge. Major Boyd Moss and Mr. Prendergast each made good trips on biplane No. 65a, the latter ascending to fully 700 ft., and landing with a very fine *vol plané*. Major Boyd Moss afterwards was practising right-hand turns, Lieut. Pickles making his highest flight up to the present, reaching close on 1,000 ft., and finishing with a clever *vol plané*. Major Boyd Moss afterwards again got in some right and left-hand turns.

Mr. Bettington then created no little amount of excitement. He set out for a solo on one of the monoplanes, and quickly disappeared from view, being away for an hour and a-half. The school motor car made several journeys in search of him, and Lieut. Fielding and Mr. Smith Barry flew all round, but found no trace of his whereabouts. The car once again set out equipped with very strong field glasses, and at length discovered Mr. Bettington on the ground near South Down Camp, having had to descend on account of a shortage of petrol. Pizey flew the machine back to the hangars. Mr. Smith Barry gave flights to Mr. Lister and Lieut. Ercole.

Mr. Pizey was out in the evening, giving flights to Lieut. Gallaher and Mr. Featherstone, solos being made by Mr. Prendergast, Lieut. McArthur, Major Boyd Moss, Lieut. Pickles, Lieut. Ercole, Mr. Lister, for first solo, and Mr. Rawson Shaw also first flight round Fargo. Mr. Smith Barry gave a tuition trip to Lieut. Ercole, landing many times. Lieut. Fielding was also out with Mr. Lister.

A very thick fog prevailed on Saturday morning, but Bendall was out giving two tuition flights to Mr. Featherstone, Mr. Smith Barry being also out with Lieut. Ercole for two trips. Major Boyd Moss made a splendid flight considering the fog, and Lieut. McArthur made altogether three trips, flying very well. Rising wind removed one obstacle, but effectively took its place, and further work had to be abandoned.

A torrential downpour lasted throughout Sunday, and all thought of flying had to be abandoned.

Royal Flying Corps.—Tuesday of last week being an ideal time for flying, Lieut. Conner made several flights on biplanes F 7 and F 8, putting in plenty of scouting practice at a good height around the Plains. Capt. Loraine also followed on his Deperdussin, climbing to a height of 1,200 ft., finishing with one of his beautiful spiral *vol planés*, with engine shut off, and making a perfect landing. Staff-Serjt. Wilson was making a solo on biplane F 8, Corporal Ridd, R.E., afterwards went for his certificate, flying in good form, having gained his *brevet* with less than a fortnight's tuition.

On Wednesday, Capt. Loraine was flying the Deperdussin at a height of 2,000 ft., and Lieut. Conner followed in biplane F 7, flying at a height of 800 ft. This officer then made his first solo flight in the Deperdussin. Corporal Ridd made several flights on biplanes F 7 and F 8, each time making good landings. Staff-Serjt. Wilson also put in some short flights. The corps was again busy in the evening doing plenty of good flying.

Thursday, Lieut. Conner was first out, flying biplane F 7, at a height of 700 ft.; Wilson also did a solo, and Ridd made a useful

flight around the camps. Capt. Loraine was on the Deperdussin, and then handed it over to Lieut. Conner, who put up a very good flight at a height of 800 ft. In the evening all were again busy with outdoor work, Capt. Loraine flying the Deperdussin for 35 mins., making a short cross-country flight at a height of 1,800 ft., he afterwards took off Lieut. Conner as passenger, and did some scouting around Devizes, Upavon—visiting the new sheds—and Bulford Camp, being in the air 45 mins., the passenger making notes meanwhile. Lieut. Conner also went up on biplane F 7, taking a passenger to a height of 800 ft. Lieut. Porter got away in biplane F 8, and put up a very good flight at a height of 800 ft., scouting the plains for 35 mins. Wilson and Ridd also make several good flights.

On Friday, Capt. Loraine took up Capt. Heneage on the Deperdussin, and Staff-Serjt. Wilson qualified for his certificate. Lieut. Conner made flights on the Deperdussin and also on Biplane F 7.

Capt. Loraine again took a passenger on the Deperdussin on Saturday, and Lieut. Porter made two trips on Biplane F 7. Capt. Allen is now attached to the corps. No flying was done on Saturday owing to rain.

On Monday Capt. Loraine was out on the Deperdussin, and Lieut. Conner on a biplane; also Lieut. Porter and Capt. Allen, Ridd, and Wilson.

Capt. Brooke-Popham has gone to the Deperdussin school at Brooklands. The two-seater Blériot has arrived back from the Royal Aircraft Factory, where the planes have been re-covered. Capt. Loraine will be the pilot.



Army Airship in the Dark.

EXPERIMENTS were carried out last week at Farnborough with the Army airships "Beta" and "Gamma" in the "wee sma" hours. About 11 p.m. on the 29th, the "Beta" went up and cruised until after midnight, and similar operations were carried out on the following day. On the 31st ult. the "Gamma" ascended, in charge of Capt. Maitland, at 10.30 p.m. and carried out a cruise of an hour and a quarter, while the "Beta" made a similar trip.



Mr. C. Lindsay Campbell, the Australian Aviator who has recently secured his *brevet* at the Salisbury Plain Bristol School, and who is determined by practical demonstration in the Antipodes to let the Australian authorities appreciate the value of aviation in the near future.

AIR EDDIES.

A PIONEER indeed is Mr. H. Barber. Connected with the Aeronautical Syndicate, since deceased, he was the first constructor in England to produce a totally original monoplane—the Valkyrie—and fly it, while a larger machine of the same type was the first all-British machine to carry passengers. To-day, as an independent consulting aeronautical engineer with a suite of consulting chambers at 59, Pall Mall, he holds an equally unique position in the aviation world. As for the value of his services, who else over here can boast of three years crammed full of designing, constructing, and piloting?

It was a great pity that the fates were unkind to Sippe when he made his attempt, on Thursday of last week, to fly non-stop from Rheims to Brooklands, a distance of over 240 miles, on one of the new Hanriot monoplanes. Conditions on this side of the Channel were very favourable—although there was quite a deal of fog over French territory—when he was forced to land, through engine-failure, at 5.30, after covering the 125 odd miles from Rheims to Minincourt, near Abbeville, in just two hours. Had he been able to continue, he would probably have dropped into Brooklands at about 7.30 in the evening, with an hour's daylight to spare. However, we are all occasionally subject to the unkind attentions of fate; so all we can do is to grin and bear it, and hope for better luck next time.

But let us hear what Sippe himself has to say about it. The following is an extract from a letter I have received about his flight: "I started from Rheims at 3.30 exactly by my watch at a height of 1,500 ft., with Regy propeller. At Laon I was going well and at a height of 2,400 ft.—left Laon 3.50. There was a slight mist, but I could follow easily the railway, and this I did until I was about 10 miles from Amiens. There I ran into a dense bank of fog presumably from the river, and did not see land until I landed at 5.30. During this time I steered by compass. About 5.10 the motor developed a great vibration, causing the compass pointer to jump about violently. At the same time the revs. as recorded by the counter sank to 900, then 850, the machine dropping from 2,400 ft. to 1,200. I thought I must, by the time elapsed, be somewhere near Abbeville, so I gradually worked my way along until I saw a cluster of houses and a church through the fog. I then shut off my engine and *vol planed* down to about 200 ft. to look for a landing place. I switched on my engine, and the only result was a splutter.

"I tried all I knew to coax the engine to go, but no use. I narrowly missed some trees, and made a perfect landing on some harrowed land, ran a few yards, then into corn 5 ft. high, and turned completely over, but very gently. The machine came to rest on the *cabane*, and I was gently emptied out on to the ground. The motor had by this time almost stopped turning, so that the propeller did not suffer. At first I feared that the crank shaft was bent, but further examination has proved to the contrary. The sum total of the damage was the front engine-bearer and the oil-cowl above slightly bent, enough as it happened to put an end to the flight, worse luck! I reckon it was weak inlet springs that caused the trouble."

Rhyl really sets a fine example to the world in its treatment and appreciation of its aviator, Vivian Hewitt. At most other places complaints of the noise in the early morning, of crops blown down by the propeller-draught and trampled down by the influx of spectators are often the extent of the welcome that pilots are afforded. Rhyl is different. They give their aviator municipal receptions. The Town Band and the Fire Brigade turn out to greet him. And now Rhyl is subscribing for a silver cup to commemorate Hewitt's flight across the Irish Channel.

Verrier's method of flying the Maurice Farman at Hendon caused quite a deal of surprise at that aerodrome, and quite a deal of excitement on the part of some of our dailies, who mistook his curious handling of the machine for various new discoveries, ranging from automatic stability to the solution of the problem of how to hover. The gliding angle of this machine is, I know, remarkably small, and when *vol planing* against the wind, the forward motion relative to the earth seems very little when the machine is at a good height. This, however, does not materially assist the solution of the problem. Why did they not hail the discovery of hovering on the occasion when Hamel, in a 60-mile-an-hour machine, flew

against a 65-mile-an-hour wind when going for altitude honours at one of the first of the Hendon meetings.

Talking about the fine gliding angle of the Maurice Farman machine, Verrier was flying that machine over the Welsh Harp Waters last Tuesday evening, when his engine stopped. He was only up about a thousand feet at the time, but he glided back to the aerodrome and made a half circuit before landing.

It is good to see Clement Greswell resuming activities in the aeroplane world. He is back at Hendon again this time as manager of the Practical Flying Department of the Aircraft Co. Let us wish him as great a success in this business capacity as he attained as pilot.

The source of revenue from hydro-aeroplane passenger carrying—and it promises to be a particularly extensive one—is beginning to be tapped at Windermere by Mr. Stanley Adams flying the "Waterhen," one of the hydro-biplanes belonging to the Lakes Flying Co. The same fees, apparently, are in force as at our well-known aerodromes, that is from two guineas upwards, but to encourage matters a bit they have announced that every fourth passenger to book a flight will be taken free of charge. Seven passengers, two of whom were ladies, had trips on the first day of the service, and, no doubt, as soon as the notion gets well settled round about the district, twice, or probably three times, that number will avail themselves daily of the exhilarating experience. Personally I should have thought it would have been possible to arrange the fees at a slightly higher scale than for mere aerodrome flying, for I should imagine flying over water to be a great deal more pleasing than flying over land.

Many schemes are on foot for the providing of hydro-aeroplanes around our coast. I have heard that several Farman's, a Curtiss, and one Caudron, maybe two—all hydro-biplanes—are more than likely to be seen over here before long.

"OISEAU BLEU."



From Eastchurch to Ramsgate.

LAST week-end saw several of the naval aviators at Eastchurch paying visits to Margate, *en aeroplane*, of course. On Thursday, Lieuts. Hewlett, L'Estrange, Malone and Spencer Grey, all on Short biplanes, the last mentioned on one of the Tractor-type, and carrying a passenger set off for Ramsgate. Lieut. Hewlett ran into a dense fog near Herne Bay and after losing his bearings, eventually made his way back to Eastchurch along the coast. The other two machines landed safely between Margate and Ramsgate, and eventually returned to Eastchurch. The next day the three pilots again went over to Margate and back.

Bomb Dropping from Army Aeroplane.

IN a bomb-dropping experiment carried out at Aldershot on Monday, Mr. de Havilland took up an iron weight weighing 1 cwt. and released it by means of a trigger at a height of 200 ft. As far as could be observed the sudden loss of this weight had no effect on the flight of the machine, one of the Army biplanes.

High Flying at Aldershot.

RETURNING with his son from Hendon on the 28th ult., Mr. Cody arrived at Farnborough at a height of 4,850 ft., and the following day Lieut. J. N. Fletcher, R.E., had the same machine up to a height of 1,000 ft., and flew round Farnborough to Aldershot. On the 31st ult., Mr. de Havilland on the B.E. 2 was up to an altitude of 6,050 ft., and afterwards with Lieut. Reynolds as passenger went up to over 4,000 ft.

The "Amphibian" at Harwich.

ON the Short hydro-biplane "Amphibian," Commander Samson, accompanied by a passenger, on Monday afternoon, flew along the coast from Burntwick Island, near Sheerness, to Harwich, where an aeroplane station is already partly established.

An Etrich for the British Navy.

THE Admiralty have purchased an Etrich monoplane, one of which it will be remembered started in the *Daily Mail* Circuit of Britain. It was despatched from the works near Vienna on the 29th ult.

AERONAUTICAL SOCIETY OF GREAT BRITAIN.

OFFICIAL NOTICES AS SUPPLIED BY THE SECRETARY.

Meetings.—*Mr. Holt Thomas's lecture will be held, by kind permission, in the Committee Room of the Royal Automobile Club.*

June 12th, Wednesday, 8.30 p.m. G. Holt Thomas on "Hydro-aeroplanes," illustrated by cinematograph. The chair will be taken by Lord Saye and Sele.

Members are requested to note that under the rules they are permitted to introduce visitors at General Meetings.

Informal Meetings.—Informal Meetings for the discussion of set subjects are held at the Society's Offices, 11, Adam Street, Adelphi, on Mondays from 5 p.m.

June 10th, "Aerial Targets for Artillery."

Associate Fellowship Election.—The following have been recommended by the Council for election to Associate Fellowship:

Dr. F. A. Barton, A. E. Berriman, Robert Blackburn, Harris Booth, F. H. Bramwell, Capt. H. R. M. Brooke-Popham, Capt. C. J. Burke, Col. J. E. Capper, C.B., R.E., Col. J. D. Fullerton,

R.E., W. E. Gibson, B. Melvill Jones, H. F. Lloyd, Capt. E. M. Maitland, F. K. McClean, G. F. Mort, Percival Spencer, Prof. Herbert Chatley, Bertram G. Cooper, Horace Darwin, F.R.S., Harry Ferguson, Edward P. Frost, A. P. Thurston, W. R. Turnbull, Howard T. Wright, and W. Ellis Williams.

Society's History.—An illustrated history of the Society has been prepared and is being circulated to all members. The Council hope that members will assist them in their efforts to increase the membership and funds of the Society by purchasing copies for distribution, or by forwarding donations to the Secretary to defray the cost of their effective circulation.

The Council beg to thank the following for donations for the distribution of this history: Griffith Brewer, Harris Booth, Hon. Alan R. Boyle, Dugald Clerk, Alex. McCallum, F. K. McClean, Alec Ogilvie and Howard T. Wright.

T. O'B. HUBBARD, Secretary. ✱

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AVIATION HISTORY AND WILBUR WRIGHT.

SOME of our contemporaries among the daily press have taken occasion to lay claim to being the first to publish statements relating to Wilbur Wright's early work, the *Daily Mail*, in particular, mentioning their issue of December 29th, 1905, as containing the first account of human flight ever printed in an English newspaper.

The *Daily Mail* has indeed done more than all the other English newspapers together to further the practical progress of aviation, but it does not happen to have been the first to record the Wright Brothers' experiments.

The first account of human flight ever printed in an English newspaper appeared in the *Auto.* of December 26th, 1903, which issue contained a leader referring to the triumph of Wilbur Wright and his brother, who, after three years' experimental gliding, had finally built a motor-driven aeroplane, and had on December 17th of that year achieved four free flights, rising from the ground against the wind.

In justice to a foresight, which was much ridiculed at the time, it is only fair to recall how the *Auto.*, which was mainly devoted to the interests of motoring, laid itself out systematically to chronicle aeronautic development. This it regarded as properly within its sphere, inasmuch as neither the aeroplane nor the dirigible could fly at all without the aid of an engine similar, at least in principle, to those employed on motor cars.

In February, 1902, there was a leader in the *Auto.* appreciating the Wright Brothers' gliding experiments, and forecasting that it was "only a matter of time" before they would succeed in building an engine-driven flyer. In the same month of 1904 there was a full account—so far as it was ever possible to obtain a full account of the Wright Brothers' work—of how they had fulfilled this prophecy.

It is not without interest to recall these little incidents in the journalistic side of the past, because it is, after all, in the light of such records that future historians must paint their picture of progress. Moreover, 1908, when the first Aero Salon was held in Paris, the aeronautic section of the *Auto.* was in such imminent danger of overstepping even its most extended limits (and it had grown from an occasional paragraph to a page or more a week) that its proprietors decided to found a sister paper on the spot—and thus *FLIGHT*, the first aero weekly in the world was born.

An Early Letter from Wilbur Wright.

THE following letter from the late Wilbur Wright has very kindly been sent to us for publication by Mr. Sidney Hollands: it has an

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Another Attempt on Leeds-Filey Trip.

AN attempt was made by Mr. J. Brereton, on his Blackburn monoplane, to fly from Filey to Leeds, on Wednesday last week, but motor trouble put an end to the trip after a third of the sixty miles had been covered. Bringing his machine out about 6 a.m., Mr. Brereton made a preliminary flight over the sands, and finding everything in order decided to start at once. Rising to a height of 800 ft. he steered in the direction of Staxton, and still continuing to climb he passed by Sherburn and Heslerton. When over Rillington the motor stopped and the pilot was obliged to plane down into a cornfield near Malton. He managed to pull up in time to miss a hedge, but slightly damaged the machine. Everything was right again in an hour or two, but in trying to get away one of the tyres gave trouble. Eventually the aviator re-started at five o'clock, but

especial interest as in it the great pioneer refers with characteristic openness and modesty to his historic achievements:—

(Copy.)

"Wright Cycle Company,
"1127, West Third Street,
"Dayton, Ohio,
"July 16th, 1905.

"DEAR MR. HOLLANDS,—We have received your letter with much pleasure. Our experiments were continued during a considerable part of the summer and autumn of last year with quite favourable results. It is not our desire, however, that too much interest in our work should be publicly aroused at present, and accordingly cannot make any extended report until the experimental period is past.

"In 1904 we succeeded for the first time in making complete circles, and landing at the starting point.

"On two different occasions the flight extended over nearly four rounds of the field—a distance of nearly three miles. The duration of these flights was five minutes and four seconds in one case, and four minutes fifty-two seconds in the other. The speed was about 35 miles an hour.

"The new problems, previously unsuspected, which are met with at almost every step, consume much time in developing a machine for practical use, but the critical points have been passed, and within a reasonable time we expect to have the machine ready to present to the world for some serviceable purpose.

"Your articles in *Flying* (1901-2)* were read at the time with interest, and it would please us to see some experiments along that line, to see whether it would offer any advantages over gliding as a method of practice.

"We hear from Mr. Chanute now and then, and at last report he was well, though he had a troublesome attack of the influenza last winter.

"You have probably seen some account of the experiments which Mr. Avery made with a Chanute glider at St. Louis last summer.

"We have no recent word regarding Professor Langley, but think he has abandoned the effort to fly his machine. It was evidently too frail to be of real value for experimental purposes.

"There is much more interest taken in aviation than for some years past; but, except the experiments of Mr. Montgomery, little of the work is of much value.

"Yours truly,
(Signed) "WILBUR WRIGHT."

* "The Bicycle as an Accessory to True Flight," by Sidney H. Hollands and G. Lacy Hillier.

the motor was again in difficulties about two miles further on, causing a descent in Welham Park, where the flight was abandoned, the machine being taken back to Filey by train.

A Good Flight at Rhyl.

ON Tuesday week, Mr. Hewitt was up on his 50-h.p. Gnome-Blériot for 40 mins. Leaving the Foryd aerodrome, Abergele, at 7.30 in the evening, he flew over the promenade at Rhyl at an altitude of 1,500 ft., and then had a very exciting race with an express train as far as Prestatyn, about five miles distant, easily beating it. Mr. Hewitt was testing a new *cabane* which he had made, and during the 40-minute trip found it highly satisfactory. It being Whit week, the promenade was black with people, who intently watched his flights round the excursion steamers.

THE FIRST AERIAL DERBY.

TO-DAY, starting at 4.15 at the London Aerodrome, Hendon, the first Aerial Derby will be held over a course of 81 miles circling the outskirts of London. Both start and finish of the contest is to be witnessed at the Hendon Aerodrome, a feature which makes the race all the more interesting. The course lies from Hendon to Kempton Park, turning above a chimney there, to the Grand Stand at the Sandown Park Racecourse. Russell Hill, Purley, is the next turning-point, from after which competitors will proceed to a certain tower at Epping after rounding a group of Government Buildings at Purfleet. From there, rounding a high water tank at High Barnet, they will proceed straight back to the Aerodrome. Competitors will be sent away at one minute intervals, starting at 4.15, and will be expected back in sight at the aerodrome soon after half-past five.

The presentation of the prizes will take place at the aerodrome immediately after the decision of the contest.

At the time of going to press 15 well-known pilots have sent in entries for the contest. The following is the list of entrants:—

Name of Pilot.	Aeroplane.	Motor.
Gordon Bell ...	Blériot M. ...	50-h.p. Gnome
S. F. Cody ...	Cody B. ...	60-h.p. Green

Gustav Hamel...	Blériot M. ...	50-h.p. Gnome
B. C. Hucks ...	Blériot M. ...	50-h.p. Gnome
Maurice Guillaux ...	Caudron M. ...	45-h.p. Anzani
Lieut. Walter Lawrence	Blackburn M. ...	60-h.p. Green
W. Moineau ...	Breguet B. ...	100-h.p. Gnome
W. B. R. Moorhouse..	R.-M. M. ...	50-h.p. Gnome
Jules Nardini ...	Deperdussin M. ...	50-h.p. Gnome
Lieut. J. C. Porte ...	Deperdussin M. ...	60-h.p. Anzani
S. V. Sippe ...	Hanriot M. ...	50-h.p. Gnome
T. O. M. Sopwith ...	Blériot M. ...	70-h.p. Gnome
Lewis Turner ...	Grahame-White B.	50-h.p. Gnome
James Valentine ...	Bristol M. ...	50-h.p. Gnome
Pierre Verrier ...	Maurice Farman B.	70-h.p. Renault

B = Biplane. M = Monoplane.

Immediately preceding the contest will be run a speed handicap race in competition for a trophy and £75 cash prize offered by the distributors of Shell motor spirit. Practically the whole of those pilots taking part in the flying Derby have entered for this event. In addition, exhibition flights will be given during the afternoon by Mrs. C. de Beauvoir Stocks and Messrs. Charles Hubert, Louis Noel and Claude Grahame-White.

The Progress of the "Daily Mail" Tour.

CONTINUING the story from where we had to break off in our last issue, M. Salmel on Wednesday week succeeded in making the journey from Llanelly to Taunton, a journey of about 80 miles. Before leaving Llanelly he made one or two circles and then set out for the Mumbles, 12 miles away. From that point he steered across the sea for Weston-super-Mare, where the holiday-makers had a splendid view of the aviator as he passed by. He then made his way to Bridgwater, where it was market-day, and so on to Taunton, where he received an enthusiastic welcome. On the following day he flew over to Chard, which was the home of the late Mr. John Stringfellow, the well-known aeronautic pioneer, and dropped a wreath of roses near the Stringfellow residence before coming down in the meadow near the town. All the inhabitants turned out to welcome M. Salmel, and he paid a visit to the house of the late Mr. John Stringfellow before flying back to Taunton. On Friday he went to Wellington, in Somerset, and gave a quarter of an hour's exhibition flight before returning to Taunton. Although the weather was not propitious on Saturday, there being a succession of heavy rainstorms, he succeeded in carrying out his programme and flying to Exeter, the 31 miles being covered at a speed of 60 miles an hour. Owing to rain he had been unable to circle above Tiverton, but he gave some demonstration flights at Exeter. On Monday he was to have gone on to Exmouth, but although he made two attempts to start, each time he had to go back owing to the wind.

Brevet after Fourth Day on Machine.

SOMETHING of a record has just been made at the Grahame-White Aviation School at Hendon. Lieut. B. T. James, R.E.,

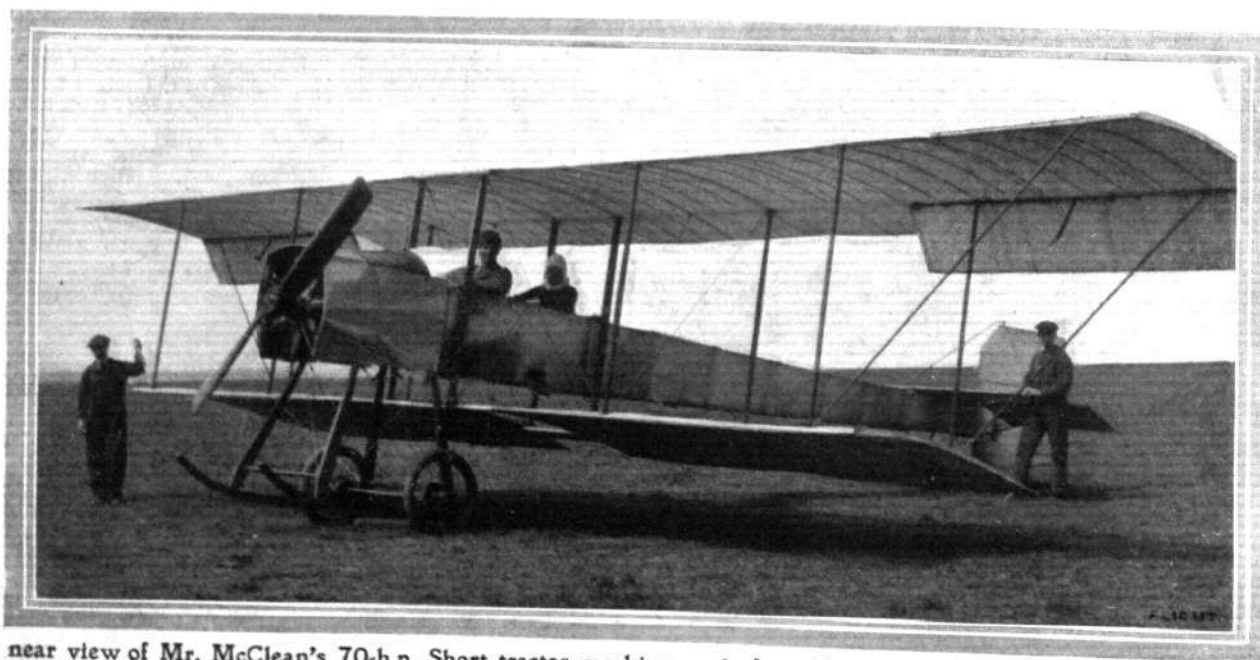
one of Mr. Lewis Turner's pupils, obtained his pilot's certificate after having had only three days' practice, that is, mornings and evenings. On the fourth day—last Saturday morning—with a 12 m.p.h. wind blowing, he took the school biplane out and put in the necessary flights for his "ticket" which he obtained in excellent style. Lieut. James, who is at present at Dover, only had a few days' leave in which to qualify and was delayed a good bit by bad weather, so his performance is all the more remarkable. It is his desire to join the Army Air Battalion and with such natural aptitude for air work, in this our readers will, we feel sure, join us in wishing him every success.

A New Short Hydro-Biplane.

HAVING obtained his new hydro-biplane built by Messrs. Short Brothers, Mr. F. K. McClean is carrying out experiments with it at Harty Ferry. The new machine is different from the Amphibian-type as it has a forward elevator and the propeller is behind the main planes.

Aeronautical Courses for Boy Scouts.

THE Aeronautical Courses for Boy Scouts arranged by the Young Aerial League appear to be meeting with a good deal of success. The scheme is that with the aid of a text-book published by the league, the scout masters shall give a series of lectures to their scouts and then hold an examination. Those who pass in this examination, in which they have to supply written answers to six out of about a dozen questions, are given a certificate. Scout masters can obtain all information from the offices of the League, 227, Strand.



A near view of Mr. McClean's 70-h.p. Short tractor machine ready for a flight. With Mr. McClean is Miss Lucas as passenger.

FOREIGN AVIATION NEWS.

Buc to Orleans and Back.

MOUNTING their R.E.P. machines Granel and Lieut. Campagne went from Buc to Orleans, by way of Etampes on the 29th ult. They landed at Cercottes aerodrome, and subsequently returned to Buc via Chartres, Chateaudun and Rambouillet, the 170 kiloms. being covered at a very fast rate.

The New Clement-Bayard Biplane.

THE new all-steel Clement-Bayard biplane, piloted by Gastinger, made its first cross-country trip on the 30th ult. Starting from Issy at 5 o'clock it flew via Etampes and arrived at Chartres at 6.10, making two circles above the Cathedral before landing. On the previous day Chassagne, on the Clement-Bayard monoplane, flew across from Issy to Villacoublay.

Comte de la Vaulx gets a Prize.

FOR his book, "The Triomphe de la Navigation Aerienne," the Comte de la Vaulx has been awarded the Sobrier Arnould Prize of 1,000 francs by the Academie Française.

Chalons to Douai.

ON the 31st ult., Lieut. Sensever left Chalons on his biplane at 4.30 a.m. in order to rejoin his Station at Douai keeping mostly at a height of about 1,500 metres he made the journey in 2h. 20m. arriving at La Brayelle at 6.50.

A New Sommer Superior Pilot.

ON Saturday Gilbert on a Sommer monoplane carried out tests for a superior certificate over a course which had as its points the three Camps, Chalons, Sissonne, and Mailly.

A French Memorial to Wilbur Wright.

By way of perpetuating the memory of Wilbur Wright, who made some of his first French flights in the neighbourhood, the Municipal Council of Mans has decided to name one of the streets after the famous pilot.

160 Kiloms. on a Borel.

ON Saturday morning, Lieut. de Vergnette started from Buc, on his Borel-Gnome and steering due east he passed by Brie and reached Rozoy. There he turned and flew back again to Buc, his altitude during both the outward and homeward journey having been about 800 metres.

Mr. Sopwith Tries a Hydro-Aeroplane.

ON Sunday Mr. Sopwith was visiting Paris and tried a hydro-aeroplane over the waters of the Seine, passing under and over the Juvisy Bridge.

Another Blériot Superior Pilot.

OVER a course from Etampes to Beaugency and back Baron Pasquier made a splendid test for a superior certificate on the 30th ult. The distance of 150 kiloms. was covered at an average altitude of 1,200 metres.

Long Trip on a Henry Farman.

ON the 29th ult., Lieut. Vogoyeau started from Versailles at a quarter to five on his Henry Farman machine and landed at St. Savine, near Troyes, at 10 o'clock. Between Romilly and Troyes he was considerably buffeted by the wind. He was accompanied as far as Palaiseau by Serjeant Hurard.

Labourchere takes Two Officers Up.

ACCOMPANIED by Commandant Renaud, chief of the laboratory at Chalais Meudon and Commandant Dorand, Rene Labourchere made a splendid flight on the 29th at Villacoublay. In a subsequent flight with a single passenger he was up for an hour and passed over Versailles, St. Cyr, Villepreux, Trappes and Buc.

Tests with Blériot Deutsch Limousine.

ON Saturday last at Etampes tests were carried out

with the Blériot limousine, built for M. Henri Deutsch de la Meurthe preparatory to its being handed over to its owner. The trials were witnessed by his secretary, M. Perisse, as M. Deutsch himself was detained at his laboratory at St. Cyr. With Perreyon at the wheel and with 300 kilogs. of ballast in the cabin, representing the four passengers, it made a trial trip of 35 mins. duration at an altitude of 60 metres, while the speed was about 80 kiloms. an hour. It is fitted with a 140-h.p. Gnome engine.

Along the Seine in an Hydro-Aeroplane.

ON the Sanchez Besa hydro-biplane, Benoit on the 30th ult. flew from St. Germain to Issy, following the course of the River Seine, and covering 50 kiloms. in 35 minutes.

Villacoublay to Chartres on an Astra Biplane.

LABOURET and his mechanic on an Astra military-type biplane left Villacoublay on the 29th ult. and flew to Chartres in 85 minutes. They returned to Villacoublay in the evening, making a stop on the way at Etampes.

Mourmelon to Villacoublay on a Nieuport.

FLYING for a superior military certificate, Charles Nieuport on the 30th ult. flew from Mourmelon to Villacoublay in 1 hr. 28 mins. During most of the trips the Nieuport monoplane was kept at a height of 1,000 metres.

Four Fatal Accidents.

FRANCE, Germany and America were the scene of fatal accidents on Saturday and Sunday last. At Juvisy, Collardeau, on his biplane, arrived at 7 p.m. from Villacoublay whither he had flown earlier in the day. He had his mechanic on board, who, although not certificated was a good flyer. After circling above the aerodrome for some time, the machine was caught in a sudden storm and dashed to the ground from a height of 50 metres. Reby sustained a fractured skull and died almost immediately, while Collardeau sustained very severe injuries.

In Germany on Sunday, Lieut. Stille and Buchstaetter were the victims. They were starting out, the first as passenger with Buchstaetter, on the first stage of the North-West circuit from Bremen to Munster, when the machine capsized and both men were instantly killed. In America, Philip Parmalee was killed on Saturday apparently through his machine being capsized by the wind at North Yakima, near Seattle. On the previous Thursday a spectator had been killed by the propeller of Parmalee's machine, while in trying to clear the victim Parmalee ran his machine among the spectators and injured several.

More French Soldiers to Learn Flying.

THE French War Office have just announced the names of 30 more non-commissioned officers who have been nominated to undergo a course of training in aviation, and 3 who will be attached to dirigible work.

An Escadrille in Flight.

ON the 29th ult., Nancy had a visit of an escadrille of military aeroplanes, which had flown over from Mourmelon, composed of Lieuts. Morel on a Sommer, Chale on a Farman, Rochet on a



THE FIRST MONOPLANES FOR THE TURKISH ARMY.—Standing in the pilot's seat of the R.E.P. (left-hand machine) is Commander Fessa Bey, the first Turkish military pilot. In front the Turkish Military Commission is seen, the fifth from the left being Gen. Mahmud Scheffket Pasha, the Turkish War Minister. On the right is a British pilot, who has been engaged, with his R.E.P. monoplane, by the Turkish Army as instructor.

Deperdussin, and Sapper Seguin and Lieut. Bosquet on a Farman. They left Mourmelon at 5.30, made a stop at Toul, arriving at Nancy at 10.30.

Buc to Sissonnes on a Maurice Farman.

A FINE flight was carried out by Lieut. Manger Devarenne with Lieut. Couret as passenger last week. They started from the Maurice Farman headquarters at Buc and carried certain spare parts and tools on board. Stops were made at Doue, Meaux, Chalons Camp, and Rheims and the destination Sissonnes Camp, was reached without incident.

French Army Testing Aeroplanes.

ON a five-kilom. stretch of railway, in the neighbourhood of Chantilly, the French Army authorities have been testing the strength of standard types of aeroplanes. They have fitted up a truck, and for the first tests mounted a Blériot monoplane upon it. A locomotive was then attached and the truck drawn along the railway at speeds up to 110 kiloms. an hour. During the run the various operations required for steering, balancing, &c., were carried out by an officer in the pilot seat, and the effects noted.

Crombez and His Deperdussin at Ostend.

ON the 28th ult., Crombez, on his Deperdussin monoplane, started from Nieuport-les-Bains and landed at Thourout. He subsequently was flying over Ostend for a silver cup offered by the local Aero Club. He was out for about an hour altogether.

No Flying Bicycle Successful.

OF the 198 machines which had been entered for the Peugeot prize of £400 for the first machine to cover ten metres on a flying machine solely operated by muscular power, only twenty-three presented themselves at the Parc des Princes track, Paris, to be tested on Sunday last. Of these none succeeded in covering the ten metres, nor were any successful in making the test for the smaller prize, flying across two strings, one metre apart and each one decimetre high. It has, therefore, been decided to hold another event in October. Many of the machines were crude and it was evident that their builders had no knowledge of aeronautics, but in one or two instances the ideas were of pleasing design and well carried out and the tests seemed to indicate that with a little careful experimenting on the part of the inventors it might be possible to fulfil the conditions.

A German Circuit Falls Through.

THE flying circuit arranged to be held in the north-west of Germany has practically fallen through, owing to absence of competitors. Only two started from Germany on Sunday last, and neither of these succeeded in completing the first stage to Munster. The start was also marred by the fatal accident to Buchstaetter and Lieut. Stille.

Yohannisthal Week.

FOLLOWING our record last week, the wind on the 28th ult. prevented any work being done until the evening when

Abramowitsch carried a number of passengers, including a Russian princess, and won two prizes. Other flights were made by Rosenstein, Stiploscheck, and Marechal. On the following day the longest flights were by Abramowitsch, 1h. 15m. (with Princess Tschachowski as passenger), and Mohns who was up for 40 mins. The other aviators only made short trials. On the 30th 16 pilots took the air at different times, and the outstanding performances in the duration competition were Abramowitsch, 3 hours, Rosenstein with passenger, 2h. 50m., and Mohns, 2½ hours. On the 31st, Abramowitsch was up for 2h. 59m. with a passenger and reached an altitude of 2,000 metres, but he is ineligible to compete for the Emperor's altitude prize, which will probably be awarded to Gorrisen who did 880 metres. Other long flights were those by Rupp, 2h. 33m., and Alig, 2h. 22m.

The Swiss Height Record.

THE Swiss Aero Club has passed Maffei's height record as 1,250 metres, which was the altitude above the ground registered by the barograph.



AIRSHIP NEWS.

Another Trip by the "Schutte Lanz."

THE German rigid dirigible "Schutte Lanz" made another appearance on the 31st ult., when she left Mannheim at 5 a.m., and visited Karlsruhe, returning to Mannheim at half-past eight.

Mr. Vaniman has a Mishap.

MR. MELVIN VANIMAN, who is planning to cross the Atlantic in a dirigible this autumn, had a 50-min. trial trip on his airship, "Akron," at Atlantic City, New York, on Saturday last. While at a height of 500 ft., one of the propellers became entangled with a rope, and one of the blades was broken. The airship descended to the water, and temporary repairs were made, sufficient to enable it to get back to headquarters.

Long Cruises by "Clement Bayard III."

ON the 28th ult., the "Clement Bayard III" made a cruise of three hours' duration not landing until after dark, and a similar trip was undertaken on the following night with a crew of eleven on board. On the 30th she was up two hours over the Compiègne Forest and turned above Villers Cotterets. She carried twenty-one persons, among those on board being the Marquis and Marquise De Dion, M. and Mme. Archdeacon, M. and Mme. Maurice Clement, M. and Mme. Garnier, M. Delahaye, &c. M. Clement was in charge of the ship with M. Sabathier as engineer. On Friday, the airship travelled over from Lamotte Breuil to Issy, the journey taking 3 hours and 5 mins. Among those on board was M. Clement, Colonel Hirschauer, Maurice Farman, and a number of other officers.

"Capitaine Ferber" Out for Four Hours.

IN connection with the Military manoeuvres at Nancy, the military airship, "Capitaine Ferber," was out for four hours on Saturday last, during which time she kept in constant touch with the troops engaged.

Zeppelin Long Distance Cruise.

By way of celebrating the opening of a large airship harbour at Hamburg, and taking advantage of the south-westerly breezes, Count Zeppelin was able to take his latest airship "Z 3" from Friedrichshafen to Hamburg on Friday and Saturday last. With twelve persons on board the airship left Friedrichshafen at 11 o'clock on Friday evening and flying by way of Ulm, Wurzburg, Gottingen and Hanover she arrived at Hamburg at twenty minutes past nine the next morning, landing at Grossborstel, where a shed large enough to house two Zeppelin dirigibles has been built. The journey of 465 miles was covered at a speed of over 43 miles an hour. On arriving at Hamburg Count Zeppelin was heartily congratulated by the burgomaster and other officials of the city and district and also had a laurel wreath hung round his neck. Prince Henry of Prussia who arrived in a motor car soon after the airship also joined in the welcome. On Sunday the airship paid a visit to Clement and during this 75 miles trip Prince Henry of Prussia was on board.



Some German aviators who are helping to make flying history on the Continent, and some of their passengers.—From left to right: Lieut. Scholler, Obering, Hirth, Oberlt. Bahrends, Oberlt. Albrecht, Rittm. Graf Wolfskeel, Lieut. Haller, Lieut. Hahnke, Lieut. Knofe.

THE AERO ENGINE.

By G. H. CHALLENGER. (Continued from page 497.)

Valve Diameter.—The size of mushroom or poppet-valves which can be fitted is limited for practical reasons by the diameter of the cylinder, so that for a given cylinder diameter the higher the piston-speed, the greater the loss of power due to attenuation of the incoming charge. In common language, the mixture is sucked into the cylinder during the admission-stroke, *i.e.*, the outward movement of the piston causes the pressure in the cylinder to fall below that of the atmosphere, which results in the mixture flowing from the carburettor, past the inlet-valve, into the cylinder. The flow of gas through an orifice is governed by the well-known law, that its velocity is proportional to the square root of the difference in pressure on either side of the orifice, but the difference in pressure in the motor varies directly with the piston-speed.

If for a given piston-speed the velocity of the incoming charge is sufficient to fill the volume swept by the piston at approximately atmospheric pressure, then if we double the piston-speed we have only doubled the difference in pressure, whilst four times the difference in pressure is required if the volume swept is to be filled at atmospheric pressure.

Gas Flow.—Compare two motors A and B of similar volumetric displacement for effect of valve areas and revolution speed.

A. A motor having a bore and stroke of 100 by 160 turning at 1,200 r.p.m. makes 40 piston strokes per second per cylinder, and the volume swept by the piston is 0.0445 cubic ft. so that if this volume is to be filled at atmospheric pressure during one suction stroke, gas must be induced at the average rate of 1.78 cubic feet per second for one-fortieth second. With an average area of valve opening of 0.015 square feet (which is a fair value for cylinders of 100 mm. bore), it would mean an average velocity of gas past the valve of about 120 feet per second.

B. A motor having a bore and stroke of 130 by 135 turning at 910 r.p.m. makes 30.4 strokes per second per cylinder. The volume swept by the piston is 0.0580 cubic feet. To fill the cylinder at atmospheric pressure, the rate of induction must be 1.78 cubic feet per second for 1/30.4 second, the same quantity as the previous case, but with greater time allowance. With an average area of valve opening of 0.0254 square feet (a fair value for cylinders of 130 mm. bore), the average velocity of flow past the valve will be about 70 feet per second, or a reduction on the previous case of over 40 per cent.

Both cases give the same volumetric displacement per second, but the latter shows the lowest gas velocity on account of its lower piston speed, lower revolutions, and the larger inlet valve permitted by the larger diameter of its cylinder.

Gas Inertia.—The inertia and elasticity of the gas has a considerable influence on the quality of the charge induced. In case A. Twenty times per second the cylinder wants 0.0445 cubic feet of gas and allows only one-fortieth of a second for this quantity to get inside. Even if the difference of pressure was enough to maintain a velocity of 120 feet per second through the valve (which we have seen it is not), the gas will expand rather than accelerate so quickly so that from this cause, in addition to the one previously set forth, the incoming charge is attenuated.

Case B is better off. The demand is for a volume of 0.058 cubic ft., 15.2 times per second, and the time allowance 1/30.4 of a second for each charge.

The loss due to the inertia and elasticity of the gas can be considerably diminished by the careful design of induction pipes. The increased power at full throttle due to long induction pipes is explained as follows:—The pull of the piston when the inlet valve opens sets the gas in motion in the pipe. When the inlet valve closes, this motion is not immediately arrested, its inertia and elasticity are here put to good effect—the momentum acquired by the gas in the pipe is absorbed in compressing itself against the valve, so that if the valve opens for the next charge when this compression is at its maximum or slightly before, the gas rushes into the cylinder with increased velocity and excepting for loss due to friction in pipes and slight changes of temperature due to alternate expansion and compression, the loss on tail end of one induction stroke will be made up on the first part of the next.

Valve Tuning.—If the inlet valve is not opened before or when this compression reaches its maximum, the gas in trying to gain equilibrium will get into motion in the opposite direction and starve the cylinder to a greater extent when the belated valve does open. In multi-cylinder motors the work done during the latter half of the induction stroke of one cylinder in accelerating the gas can be handed on to the next cylinder and so on, with results which are not only beneficial to the quantity of charge taken by each cylinder, but also to the quality on account of the more even pull on the car-

burettor. Cases are not infrequent on multi-cylinder motors in which the various cylinders do not assist but actually starve each other.

Compression Ratio.—The compression ratio has considerable effect on the quality of incoming charge as will be seen by Table IV in which two cylinders, A, and B, are compared similar in every respect except that, A, has a compression ratio of 4 and B, a compression ratio of 3. To simplify matters for the purpose of comparison in both cases the losses due to inertia of the incoming charge and temperature changes due to absorption of heat from the cylinder walls, residue exhaust and other causes is neglected, it is further taken that the exhaust gas present in the compression space at the end of the exhaust stroke is at atmospheric pressure, that a difference of pressure on either side of the automatic inlet valve of 4.7 lbs. per sq. in. will lift it and force mixture through at the rate of 1.78 cubic feet per second.

TABLE IV.

	A.	B.
Volume of compression space, taking that of compression ratio of 4 as unity ...	1	1 $\frac{1}{3}$
Travel of piston in unit volumes ...	3	3 $\frac{1}{3}$
Travel of piston in unit volumes necessary to reduce pressure of residue exhaust to 10 lbs. absolute ...	0.47	0.96
Unit volumes of mixture drawn in ...	2.53	1.70
Density of mixture and residue exhaust at end of stroke ...	0.68	0.51
Percentage of residue exhaust per unit volume	36.5 p.c.	65 p.c.
Percentage of mixture (at atmospheric pressure) drawn in to the volume swept by the piston ...	43 p.c.	17.9 p.c.

Volumetric Efficiency.—Under working conditions at full throttle the ratio of mixture drawn into the volume swept by the piston, would be increased by, (1) larger inlet valve opening, (2) lower piston speed, (3) mechanically operated inlet valve, (4) reduction in pressure of residue exhaust by the use of long exhaust pipes on other means, (5) forced feed of mixture, (6) weaker inlet valve spring.

The ratio would be further diminished by, (1) smaller valve opening, (2) higher piston speed, (3) throttled or insufficiently free exhaust, (4) heating of incoming charge due to its mixing with exhaust residue, (5) rise of temperature of charge during admission stroke by absorption of heat from cylinder walls, &c., (6) friction and loss due to short sharp bends in the induction pipe, (7) induction pipes which do not permit of inertia and elasticity losses being retrieved.

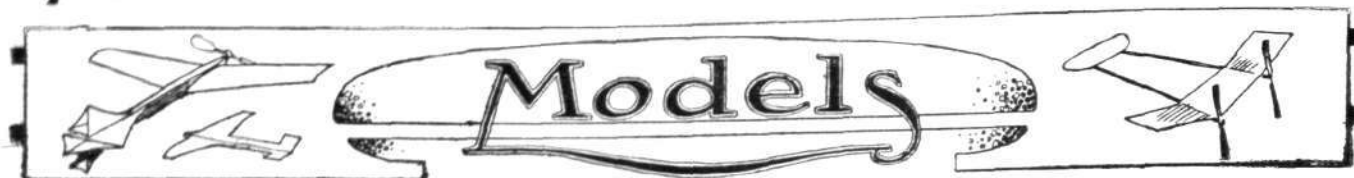
The actual total effect of the various points enumerated above on two different automobile motors can be seen by reference to Table V which gives the ratios obtained by actual experiment. In both cases the piston speeds are considerably lower than are common on aero engines.

TABLE V.

	1909 Siddeley, 5'08 × 4'62 ins. Compression ratio 4.18.	1906 Daimler, 3'56 × 5'11 ins. Compression ratio 3.85.			
Revolutions ...	530	930	720	1,000	1,220
Piston speed, f.p.m. ...	406	715	630	852	1,040
b.h.p. ...	18	28.9	—	—	—
Ratio of mixture to stroke volume	0.83	0.68	0.65	0.53	0.45
Thermal efficiency ...	—	—	0.24	0.26	0.27

Power and Volume.—Other things being equal, the power developed by an engine is proportional to the mass (or volume of the same quality at atmospheric pressure) of mixture supplied. The Siddeley engine at 930 r.p.m. takes in 68 per cent. of the total mass of mixture and develops 28.9-h.p. If the volume swept by the piston could be filled mixture of atmospheric pressure the h.p. developed at 930 r.p.m. would be 42.5. Under working conditions this result would be modified because although losses due to the inertia of the moving parts are the same in each case and the ratio of surface exposed to volume of working fluid is the same in each case the ratio of surface exposed to unit mass of working fluid is altered and exhaust takes place before explosion pressure is reduced to atmospheric pressure. This can be better seen when we consider the compression and explosion strokes.

(To be continued.)



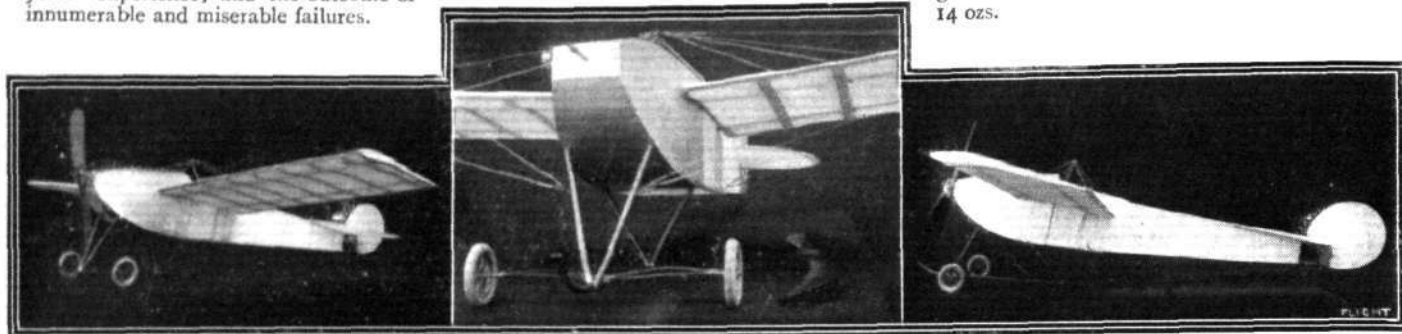
Conducted by V. F. JOHNSON, M.A.

A Successful Scale Nieuport Model.

WE give this week illustrations and particulars of a type of model which we would like to see far more in evidence than it is—a type which one can really call a *model* as opposed to a “flying-stick.” The model was designed and constructed by Mr. J. W. Burghope (Brighton and District Model Aero Club), it took three months to build, and is the result of over three years’ experience, and the outcome of innumerable and miserable failures.

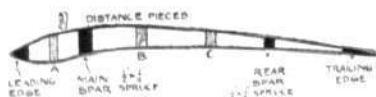
one piece, wire stayed; length of skid, 12 ins.; wheel track, $9\frac{1}{4}$ ins.; steel axle; rear skid, Bristol type, cane. The wings are stayed in the usual monoplane fashion—four wires above and the same below. The centre of thrust is in a line with the chord of the wings. Centre of gravity one-half the way along the chord of the wings. Cabane 16 s.w.g. steel wires fixed to fish-plate drilled out.

Tested on a spring-balance, the motor gives an initial static propeller-thrust of over 14 ozs.



Mr. Burghope's flying scale model Nieuport—a fine piece of workmanship.

The model rises from the ground (hangar wood floor) after a run of 30 ft., and will then fly for 70 yards. Hand launched, 124 yards has been done combined with a duration of 14 secs., and an altitude of from 35 to 40 ft. The following are the chief dimensions, &c.:—Weight, $35\frac{1}{2}$ ozs., since increased, we understand, to 37 ozs.; the loading will, therefore, be slightly in excess of that given below;



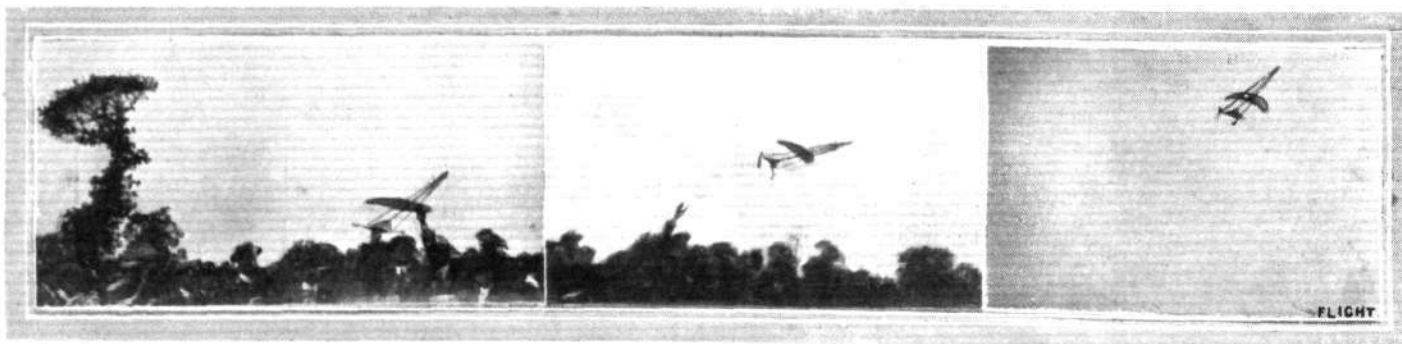
MR. BURGHOPES MODEL.—Section of Wing.

span, $49\frac{1}{2}$ ins.; length overall, $41\frac{1}{2}$ ins.; built up double surfaced wings, Phillips' entry, small camber, 9 ribs each, $22\frac{1}{2}$ ins. by 9 ins.; weight, 4 ozs. each; main spar, $\frac{1}{2}$ in. by $\frac{1}{2}$ in.; rear, $\frac{1}{4}$ in. by $\frac{1}{4}$ in.; surface area, $2'8\frac{1}{2}$ sq. ft.; loading, $12'6\frac{1}{2}$ ozs. per sq. ft.; chord (constant), 9 ins.; A.R., 5'5; angle of incidence, 2° ; tail, steel wire, 16 s.w.g.; area, 67 sq. ft.; span,

As would be expected from the type of motor used, the propeller stops quite suddenly, the model then gliding down at an angle of about 1 in 4, the tail being so adjusted that it lands *cabré* (tail well down)—but at the same time not to any great extent. When the model rises high there is sufficient weight in front to make it glide at first and then pancake. In the building of a scale tractor model, Mr. Burghope, as the result of his experiments, considers that:

The Chief Points for Success

are: comparatively fine pitch propeller—very small angle of incidence—which of course means efficient planes—small camber—very small non-lifting tail, or one with slightly adjustable flaps; fair sized adjustable rubber [rudder evidently is meant] to correct turning tendency owing to torque; and, most important of all, propeller shaft in exact line with chord of wings. The covered in body preventing side slip and acting like a large vertical fin. In another communication Mr. Burghope says:—If the wings be so arranged that the tail be made non-lifting, and the C.P. of the whole machine coincides with C.P. of the wings, then when the motive power gives out and the model descends gliding, the result is that it hits the ground at the gliding angle—



MR. A. F. HOULBERG'S MODEL.—(1) Launching; (2) Rising; (3) Off for the record.

12 ins.; fore and aft., 10 ins.; angle of tail with wings, 2° ; rudder, 31 sq. ins., 6'7 fore and aft 16 s.w.g. steel; propeller, Normale type, $14\frac{1}{2}$ ins. diam., 16 ins. pitch; pitch ratio, '91. Motor, rubber, twin bevel-ball-bearing geared. Length between hooks, 31 ins. $\frac{1}{4}$ in. square sectioned rubber, 68 strands, 27 ins. each = 51 yds.; 350 turns, 1,800 r.p.m.; lubricated; weight of rubber, 5 ozs.; fuselage, $33\frac{1}{2}$ ins. long, Nieuport type; max. depth, 4'7 ins.; width, 4'5 ins., tapering to 1'7 in. in depth at the tail; armoured in front for 9 ins. from nose with $\frac{3}{8}$ in. Azuminium on sides and bottom; dashboard of $\frac{1}{8}$ in. same; chassis, heavy $\frac{1}{4}$ in. copper round tubing, Nieuport type; soldered V's to skid; V all in

with the result that the skid hits—the propeller splinters and the machine goes tail over head—landing anyhow. Now if the tail be given a slight lift and machine so balanced that C.P. of whole machine and also the C.G. are rather behind C.P. of main planes then the tail will keep well up in flight at full speed, but will drop a little when power runs down owing to its comparative inefficiency as a lifting surface and the model will thus land a little tail down—which is better than nose down. Further on he says: At first the model landed rather tail down (very safe if flying at low altitudes) but when the altitude increased to 15 ft. and more I bent the flaps of the tail down a little bit with the result that it glided

and landed perfectly. [Perhaps Mr. Burghope will kindly explain the apparent discrepancies in his remarks *re* lifting and non-lifting tails.]

It is preferable to make use of a vertical rudder to overcome motor torque and for steering purposes than to employ wing warping, and as in all self-rising tractor models the wheels should be well in front of centre of gravity.

The Birmingham v. London Contest.

This contest held at Greenford on Whit-Monday was undoubtedly in many respects a very successful one. The visitors from Birmingham were not able, however, to hold their own against any of the three London clubs represented in the contest. The final results being: Blackheath, first, with an excellent average of 58 secs.; Paddington next, with 48½ secs.; then Ealing, with 40½ secs.; and lastly, Birmingham, with 35½ secs. Each club was represented by five "flyers," the best of three flights alone counted, and the total of these five averaged for each club. Five flights of a minute and upwards were made, the longest being that of A. F. Houlberg (Ealing), viz.: 80 secs. The shortest flight was 2½ secs. Five flights of 10 secs. and under were also made. The machines flown by the London clubs were all twin-propeller ones, of the Birmingham Club (if we remember correctly) one was a twin, but the rest had single-propellers. It was evident that these latter, under favourable circumstances, *i.e.*, in a calm could have given a much better account of themselves. But in a contest of this character, it is just these favourable conditions which cannot be relied on; and the mistake, in our opinion, made by the Birmingham club was that they did not bring to the contest what one might term a set of *fighting* models, but fair weather machines, and although the day could not possibly be considered an unfavourable one from an aero-modellist's point of view, the breeze was certainly, like all breezes, more or less gusty, and unless your machine can fight such successfully, you are placed at a decided disadvantage; generally speaking the stability shown by the models was not especially good, the chief factor relied on in the case of the twin-propeller driven models being speed, a very important factor truly, but one which, if an attempt be made to apply it *similarly* to the case of full-sized prototypes, would necessitate an impossible speed, more especially, of course, with respect to the landing.

New Official Record.

After the competition Mr. A. F. Houlberg, of the Ealing and District Aero Club, made an officially observed flight of 89 seconds,



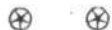
THE KITE AND MODEL AEROPLANE ASSOCIATION.

OFFICIAL NOTICES.

Presentation of Prizes.—Mr. C. Grahame-White has kindly presented a trophy for power-driven models, for petrol, steam, or carbonic acid gas motors. The competition will be held at Hendon, on Thursday, July 25th, full details in programme, which will be sent on application (and enclosing a stamp for postage) to any reader.

Visit to National Physical Laboratory.—By the courtesy of Dr. Glazebrook (Director of the Laboratory) the members paid a visit to Teddington on Saturday, June 1st. Col. F. C. Trollope, the president, accompanied the party, which left by the 1.45 train from Waterloo. Mr. Selby met the party on behalf of Dr. Glazebrook, who had been called away on business.

Inter-Club Duration Competition.—By request the Association sent official observers to this competition on Whit-Monday at Greenford, the results being: 1st, Blackheath, average 58 secs.;



PROGRESS OF FLIGHT ABOUT THE COUNTRY.

Notes regarding Clubs must reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

MODEL CLUBS.

Aero-Models Assoc. (N. Branch) (Sec., MALCOLM B. ROSS, 15, HIGHGATE AVENUE, N.).

GOOD flying at Finchley, Saturday. Mr. B. Ross visited the Tractor meeting at Palmer's Green. Competition shortly for an antimony rose bowl, particulars later; also of 1 mile relay race *v.* Palmer's Green and also inter-club match with Palmer's Green for duration.

Birmingham Aero Club (Secs., R. COBHAM, G. H. WOOD, 8, FREDERICK ROAD, EDGBASTON).

BEST week-end flight by Messrs. Trykle (85 secs.), G. Mason, G. Wilde, Rogers and Prosser.

Inter-club contest with Coventry, distance and duration, June 8th, at Coventry, at 3.30.

the model landing in a tree or even this would have been surpassed, a record which will probably take some beating. This model was, in our opinion, one of the few models which showed good stability. The following are a few particulars regarding it: type O-1-1-P², diameter of propellers 9½ ins., 1½ oz. of rubber, 9 strands, ⅜ in. strip. Total weight 4½ ozs. Material American whitewood. Fabric proofed silk. This model also made on the same day flights of 71, 67 and 80 secs. respectively so there is nothing of the nature of a fluke in this new record and it was certainly not in the slightest degree assisted by the nature of the ground.

British Model Firms and Coming Competitions.

Amongst the competitions arranged for this season are several hydro-aeroplane contests and at least one ornithopter competition. So far as we can learn no British firm has either on the market, nor have we heard of any about to put them on. The French have both, over here in London at any rate, British firms complain of lack of support amongst the more leisured classes, the fact of the matter being that such have grown tired of the ordinary type of model; but are no doubt quite ready to be interested in something of a novel character which if they want they must perforce purchase of French origin; and with regard to which it would appear that we are about to have happen precisely the same thing as occurred in the original type of model, unless the home firms bestir themselves pretty smartly. To be first in the field is everything.

Insufficient Information.

A correspondent writes: "I am thinking of building a model for a petrol engine about 1½ h.p., what would be the best size of machine to build for this kind of engine? Also, would 1 in. square wood be strong enough? Would a monoplane fly with this kind of engine and weight of machine and size of propeller?" If "Hawk" will forward omitted information such as total weight of plant, weight of machine, size of propeller, &c., we shall then be in a better position to reply to his queries. A bench test with actual plant and a record of thrust given by a propeller of known diameter would be best of all. Again and again we have to ask for fuller information, it would save an immense amount of delay and trouble if correspondents would kindly supply it in the first place.

Model Club for Leicester.

C. W. Exley (33, London Road, Leicester), would be glad to see or hear from anyone interested in the above with a view to forming a model club in Leicester.

2nd, Paddington, average 48½ secs.; 3rd, Ealing, average 40½ secs.; 4th, Birmingham, average 35½ secs. Messrs. V. E. Johnson and W. Evans being the observers.

Official Trials.—Application forms for the next trials on 15th can be had on application and should be returned before June 12th to the hon. secretary.

Official Record.—The duration record of 64 secs., held by Mr. H. Weston, was broken by Mr. A. E. Houlberg, on Whit-Monday, at Greenford, by a flight of 89 secs. Observers, Messrs. V. E. Johnson and W. Evans.

Competitions.—The *Model Engineer* competition for duration to be held to-day (Saturday), on National Aviation Ground, Harrow. (Northolt Station.)

W. H. AKEHURST, Hon. Sec.

27, Victory Road, Wimbledon.



Blackheath Aero Club (Hon. Sec., A. E. WOOLLARD, 48, HAFTON ROAD, CATFORD, S.E.).

DURING week-end flying at Grove Park by Mr. Eland (Victor), Mr. Attwoll ("A" frame and single-stick), Mr. Woollard (O-1-1-2P), and Mr. Holland (tractor). The contest for to-day (Saturday) has been postponed. *Model Engineer* competition to-day at Harrow. Flying at Grove Park during week-end, and Sunday morning a photograph of B.Ae.C. team will be taken on Blackheath at 7 o'clock. The postponed registration trials will take place July 13th.

Brighton and District Model Aero Club (Hon. Sec., A. VON WICHMANN, "KINGSLEIGH," KINGSWAY, HOVE).

AWARDS for Whitsuntide competitions as follows: Duration—J. W. Burghope, 55 secs. and out of sight; H. Bate, 45 secs. (later

he did 68 secs. with single-propeller mono.). Rise-from-ground—Bate, with 1-1-P2, in 10½ ft.; Burghope, 2nd, big Nieuport, got off in 15 ft. 3 ins. Wichmann, Williams and Orford flew well in distance. Models flew out of aerodrome after nearly 500 yards in it, so money was shared. Prizes given by Shoreham Aerodrome proprietors.

Coventry Aeroplane Building Society (Sec., J. W. SCHOFIELD, 22, KINGSTON ROAD, EARLSDON).

DISTANCE competition, June 1st, at aerodrome, Allsley Road. Three flights allowed each. 1st prize, Mr. R. Rice, 292 yards; 2nd, L. G. Ryley, 272 yards; 3rd, Mr. A. Austin, 250 yards. Birmingham Aero Club visit Coventry Aerodrome June 8th.

Croydon and District Aero Club (Sec., 158, HIGH STREET).

MAY 20TH Mr. D. Paveley beat Club's duration record with 70 secs. May 29th this was beaten by Mr. C. Smither with 88 secs. (200 ft. high and 20 secs. glide) in one flight of 80 secs., distance 378 yards. Timed by Messrs. D. Paveley, C. Parkes, and W. Bell.

Flying to-day (Saturday), at Castle Hill next to Russell Hill School, one of the turning points of the Circuit of London, and on Sunday at Mitcham.

Ealing and District Aero Club (Sec., B. J. KIRCHNER, 1, QUEEN'S GARDENS, EALING, W.).

SATURDAY Mr. Beeching (single-propeller mono.) durations 30 to 34 secs. Mr. L. Roche (small surfaced 1-1-2P) 37 to 49 secs. Mr. Chilcott's flying "3-ouncers" and 1-1-2P. Mr. Fenwick (1-1-2P). Contest with Blackheath Aero Club to-day, postponed. June 15th K. & M.A.A. record trials at Greenford.

East Ham and District Aero Club (Sec., C. SHARP, 54, SAVAGE GARDENS, EAST HAM).

TWIN-screw Model Competition to-day (Saturday) at New Beckton, 3 p.m.

Hackney and District Aero Club (Sec., B. H. LONGSTAFFE, THE HOLLIES, JENNER ROAD, STOKE NEWINGTON, N.).

DURATION contest (for carved propellers) Saturday. Mr. Gittus, 44 secs., Mr. Bond, 38 secs. Others flying, Mr. Louch, Miss L. Bond, W. A. Dove. The "Gittus" prize (duration model) won by Mr. Bond.

Paddington and Districts Aero Club (Sec., W. E. EVANS, 77, SWINDERLY ROAD, WEMBLEY).

TO-DAY (Saturday) inter-club contest with Hackney and District at Hackney Marshes, 3 p.m. Paddington Cup Open Duration Competition entries close (1s. 6d. entrance fee) first post June 12th. Competition June 22nd. Will those interested, also other club's secretaries, kindly note secretary's change of address.

Palmer's Green and District Model Aero Club (41, ELVENDON ROAD, PALMER'S GREEN, N.).

E. R. BROWN and R. L. Rogers flying well. Whit-Saturday, Tractor competition, June 1st. B. Brown won impromptu competition 120 yards. M. B. Ross on visit with 7-oz 1-1-P2 model, got several 40 secs. Paddington inter-club competition challenge accepted. Flying every Saturday. Tractor competition June 22nd.

Reigate, Redhill and District Aero Club (Sec., H. V. MAY, 4, LONDON ROAD, REIGATE).

DURING past week good work both in workshop and flying ground by W. H. Norton, J. L. Sutton, Lewis and Osborne. Lewis succeeded in covering the ¼-mile on Sunday easily, with duration up to 48 secs. Flying every evening and Saturday afternoon at Earlswood.

St. Mary's Model Aero Club (Sec., H. W. A. JOHNSON, 32, BEECHAM ROAD, PORTSMOUTH).

OPEN competition, May 25th, on Southsea Common. Results: S. Webb (Blueplane) 1st for distance, and E. Restall, duration. During week good flying by Messrs. E. Restall, Eburne, C. Restall, V. Collett, H. W. A. Johnson, S. Webb and Everett.

Scottish Ae.S. Model Aero Club (6, McLELLAN STREET, GOVAN).

MONDAY, last week, J. S. Gordon, at Dumbreck, with mono., got 52 secs. duration. Thursday meeting, Abel's farm, Shieldhall. Official results:—J. C. Balden, 41½ secs.; J. S. Gordon, 40 secs.; W. G. Langlands, 34 secs.; W. Foster, 23½ secs. Balden distance flight 1,136 ft. Saturday a demonstration was given before the inmates and staff of the Broomhill Incurables Home, Kirkintilloch. Results as follows: J. S. Gordon, 41½ secs.; W. G. Langlands, 40 secs.; J. C. Balden, 39½ secs.; Ian S. Ross, 29½ secs.; T. Graham, 28 secs.; W. Foster, 24½ secs.

C. F. Arthur's new hydro-aeroplane rose from the River Kelvin in 3 secs. and remained in the air for 16½ secs.

June 15th, distance and duration competition at Paisley Racecourse.

South Norwood District Aero Club (Sec., C. STREETER, 240, HOLMESDALE ROAD).

MEETING Wednesday, 6 p.m., on the Rec. Competition for tractors. Prize, pair of propellers.

Stony Stratford and District Kite and Model Aero Club (Hon. Sec., O. HAMILTON, JUN., OLD STRATFORD).

RESULT of distance competition: 1st, Mr. Moore; 2nd, Mr. Watson; 3rd, Mr. R. Elmes. The corrected result in Kite competition is as follows: Master H. Moore and Mr. E. Brown, Mr. T. Haseldine, Miss M. Hamilton. Mr. Moore's flights in duration competition have been passed for club record.

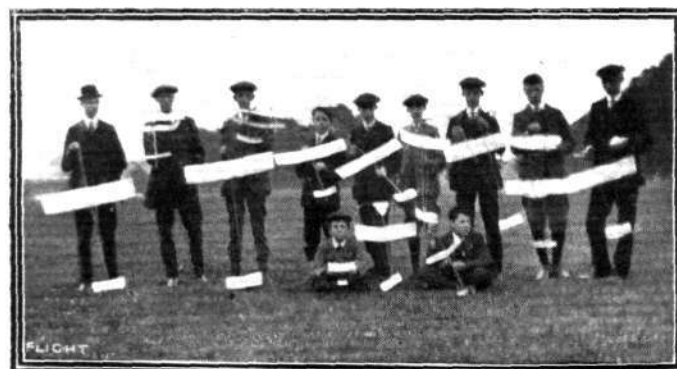
Whit-Monday best performances: Moore, 33 secs., Brown, 22 secs., 155 yds. 2 ft. Wednesday, Moore brought club record to 42 secs. Thursday, Moore, 216 yds. 2 ft.; Matson, 38 secs.

Windsor Model Flying (Sec., S. CAMM, 10, ALMA ROAD).

FEATURE of Saturday afternoon's flying was the secretary's biplane, which ascended *à la helicoptre*, to a high altitude. A relief from 1-1-P2 type, E. Dowsett, Camm, and Vevers making good durations. Flying to-day in Home Park.

Worcester Model Aero Club (Sec., S. A. SEARS, VICTORIA INSTITUTE, WORCESTER).

GENERAL business meeting June 13th at 7 p.m.



A group of the Windsor Club model flyers.

CORRESPONDENCE.

* * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which have appeared in FLIGHT, would much facilitate ready reference by quoting the number of each letter.

Army Flyers.

[1567] I see in your last issue that you made an erroneous statement with regard to the Royal Flying Corps. This was to the effect that when I flew here from Buckingham last Sunday week, I lost my way, that Lieut. Conner went out to find me, and that we returned together.

The facts were that when about ten miles short of my destination I ran into a dense fog which covered, as far as I could see, the whole of Salisbury Plain; and, though knowing I was on the exact line, and being even able to calculate the moment when I ought to be above the sheds, I did not dare descend owing to the mist. The only course was to fly on and find a spot clear of the mist, which I

eventually did find on the high ground above Wylye, about seven or eight miles beyond my destination. Here I landed, and when about two and a-half hours later the mist had disappeared I flew back to the sheds. The officers here heard me passing over the sheds at the exact time when I expected to be here, but could not see me. They started the engines of the other aeroplanes and lit a fire to attract my notice but without success.

The reason I write to ask you to correct this mistake is not a personal one, it is because I do not think it is fair to the Royal Flying Corps to make public statements that its officers lose their way flying across country, when such is not the case.

Lark Hill.

E. B. LORRAINE.

[We publish the above correction with great pleasure—our special correspondent had no intention of belittling the Royal Flying Corps work—the information as he obtained it being evidently misunderstood.—ED.]

Side-Slips.

[1568] Re the recent unfortunate accident to Mr. Fisher and his passenger, Mr. Mason, I have thought it remarkable—considering the number of fatalities due to side-slipping—that some device has not been brought forward to correct this dangerous symptom before it causes disaster. Side-slipping, it is my belief, if not prevented, will always bring a machine down nose forward, no matter how the controls are worked.

The tendency of modern monoplanes to have large covered bodies presenting a huge surface below the planes, also prevents the machine from recovering once it has got started on the side-slip. Would not automatically released collapsible curtains, or fins, placed vertically on the fuselage, or say at each end of the pilot, act as a brake, and cause the machine to recover its balance?

The curtain or fins could be held by springs, and released by the automatic action of a pendulum or other device when the aeroplane exceeded the desired angle.

Of course, it is only intended as an emergency control, and would not come under the criticism advanced against automatic lateral stabilizers as tending to set up oscillations. However, I merely suggest the idea as a substitute for the seemingly inefficient slight dihedral which most monoplanes effect, and would like to hear if the idea would be practicable.

Many thanks to you for many an interesting hour.

Manchester.

JAS. H. FELIX.

Aviation Insurance.

[1569] I consider your leading article on Aviation Insurance in last week's FLIGHT is likely to prove of the utmost importance to aviation in this country; with your usual acumen, if you will permit me to say so, you have touched upon a matter that needs urgent attention.

A young man of position and means who wishes to go in for aviation as a sport gets a lot of sympathy from friends on account of the expense and the early, inconvenient hours at which he must practice, added to the risk he is supposed to run. In none of these matters does he require sympathy, however, because he should have known of these matters, weighed them up in his mind, and convinced himself emphatically that the game was and is worth the candle.

Now this insurance question you have raised most opportunely presents a very real deterrent to the would-be youthful aviator.

Sport is all very well in its way, but if to the young it means an impossibility of insuring oneself at all it becomes a very serious matter. One's business may require one to insure. Marriage may make it most necessary; but, if you continue to go in for aviation, it is practically an impossibility to insure on anything like fair terms. Go in for polo, football, mountain climbing, but you cannot go in for flying.

I saw in a newspaper the other day that it had been calculated in France that 62,500 miles were flown for one fatal accident, and this in the early years of flight, which will of course improve each year in safety. I should think the figures would be even better for England.

Might I endorse Mr. Harrington Edwards' suggestion that FLIGHT should inquire and publish the views of different insurance companies upon the subject.

At the same time I think the Royal Aero Club or the Aeronautical Society might form a committee to collate statistics as to safety, and forward them to the insurance companies from time to time.

I am convinced that the insurance difficulty is a very great bar to the progress of aviation, and as you state "in the light of ascertained facts" the aeroplane is remarkably safe, and, therefore, this impediment should be removed at an early date.

Redcliffe Gardens.

A. J. JIMENEZ.

Airships.

[1570] I am very glad to see that you are now calling attention to the dirigible. The efforts of the "aeroplane" press, it cannot be called the "aeronautical" press, practically killed the dirigible in this country in its infancy. To the impartial man it must be apparent that whilst for army work the aeroplane is somewhat more important than the airship, at sea the reverse is the case.

For instance, if the Germans wished to look into any of our ports, or search for our fleets and flotillas in the North Sea, if they use aeroplanes to assist them, they must be sent to sea in ships, and our navy, we hope, will be able to deal with anything that floats on water.

German airships, on the other hand, such as the "Schwaben," are capable of crossing the North Sea, and we have nothing to fight them with. An aeroplane can no more fight an armed airship in the day time than a torpedo boat can a battleship. At night it may be a different matter—if the airship can be found—but seamen

know how difficult it is for a torpedo flotilla to find a battle fleet at night if they are steaming without lights, and it should be noted that the battle fleet can only move in two dimensions, whilst aeroplanes searching for airships will have to hunt in three.

Much to do has been made about our backwardness with aeroplanes, and rightly so, but it is time we awoke to the fact that we are in far greater danger from foreign dirigibles than we are from foreign aeroplanes, as the former can get here without running the risk of being carried by water part of the way, and further can carry such a quantity of explosives as to do real damage to dockyards and are better able to drop them in a suitable spot than the aeroplanes are.

PER MARE PER AERO.

Air-holes.

[1571] I should be much obliged if any of your numerous readers could enlighten me on the following points:—

1. Are air-holes so large that they may contain an aeroplane, and is there danger in this case of the structure breaking upwards owing to the sudden drop?

2. Or do air-holes, as a rule, affect only one wing of the aeroplane, so that the aeroplane drops on one side, and so loses its lateral stability?

3. Lastly, need we consider at all the fact (taking into account the speed of the machine), that the aeroplane meets the air-hole wings first, so that the wings drop and the tail goes up, upsetting its longitudinal stability?

4. In fine, is the problem of the air-hole one of stability or structural strength?

North Kensington, W.

A. W. H. THOMPSON.

Petrol Tanks.

[1572] Seeing that very often a fire follows an aeroplane smash I would make the suggestion that the petrol tank on aeroplanes should be fitted in a well-made leather case. If this were done I think the danger of a fatal fire would be eliminated in the event of a smash as a tank so protected might be crumpled up and yet the petrol would only escape very slowly.

Southport.

A.L.

Wireless on Aeroplanes.

[1573] From M. Clementel's report to the French Chamber; translated by Col. George P. Scriven, U.S. Signal Corps; H. R. Document No. 718, p. 24, 62nd Congress, 2nd Session, I take the following:—

"A machine most valuable in reconnaissance, the aeroplane, may also render the greatest service in the transmission of orders and in joining together the larger units. The commander of the army may wish to send urgent instructions to one of his subordinates commanding a portion of the front or a large detachment on the flank whose support in the fight is expected. What messenger can be more rapid than the aeroplane when roads in rear of the front are encumbered by columns hastening toward the battlefield, by regimental trains, by parks and convoys, when telephonic and telegraphic lines are momentarily cut, and WHEN COMMUNICATION BY WIRELESS IS CONTINUALLY INTERRUPTED?"

The above extract is very suggestive. In the efforts which are being made to develop a rational method of aerial scouting, is it well to concentrate all attention upon the wireless telegraph for signalling purposes?

The Secretary of the U.S. Navy, kindly complying with the request of the Editor of *Aircraft*, contributed to that journal, (Nov., 1911), an article which describes the qualities and elements which are most needed in a scouting machine for the Navy.

In the article, which shows that the Secretary takes a deep interest in military aviation, he says of the aeroplane, "In any case it should be provided with a wireless telegraph outfit for communicating with the ships of the fleet while at an altitude of 3,000 ft. or more, and while out of sight at a distance of thirty miles or more." Would the Secretary be willing to append the following to the paragraph just quoted? "Any system of aerial signalling which can render good service at a distance of ten miles will be worthy of the consideration of the Navy."

It is proper to ask now a very serious question. Is it not possible that the military authorities here and abroad are making a great mistake in assuming that wireless aerial signalling will be dependable in time of war?

If the Governments find it necessary to enact legislation to protect themselves from the amateurs in time of peace, what will happen in the unfortunate event of war, when powerful disturbers, producing all wave lengths are certain to be quickly constructed and brought into action?

It is said that in the German Navy the selective method is in

successful operation. Very likely; we have had excellent demonstrations of the same here in the absence of all-wave-length-disturbers.

The experiments and investigations concerning wireless telegraphy from aeroplanes are sure to go on; the defects are plainly visible; they may be overcome. Is it safe for the military authorities to take as a working hypothesis that they will be overcome? Should visual aerial signalling be ignored?

One thing has never been claimed for wireless; the possibility of relaying scout messages by passing them from one scouting machine to another.

For this kind of service, as well as for the services mentioned by M. Clement in the above extract, there is a simple and reliable method. I refer to puff-signalling. By this method coloring matter is intermittently injected into the exhaust pipe of the flying-machine motor, from the pipe this is ejected in large and small puffs resembling very black smoke; these correspond to the dashes and dots of the Morse telegraphic code.

Boston, U.S.A. May 17th.

JAMES MEANS.

MODELS.

Question of Records.

[1574] I thoroughly agree with Messrs. Mann and Grimmer's letter (1562) when they state the world's records they claim for the Mann monoplane are quite different things from the British Official records. These latter are observed and recorded by the K. and M.A.A., and, the velocity of the wind being recorded by an accurate anemometer, the absolute distance covered by the model in a dead calm can be arrived at.

Messrs. Mann and Grimmer are both members of the K. and M.A.A., and for a time Mr. Mann held the official distance record and doubtless will do so again. I must take exception, however, to one point in their letter *re* flying in a wind of twice 40 m.p.h.

This wind I find described in *Flight Manual* as a "hurricane," and it is closely approaching the highest wind accurately recorded, which is slightly over 100 m.p.h. Now, apart from the extreme difficulty of launching an 18 m.p.h. model in a wind of 80 m.p.h., presuming the model once launched, if it only circled for its 60 second flight it would be carried by the wind a distance of approximately 1½ miles from the starting point, thus creating a new "world's record."

Barnes.

GEORGE ROWLANDS.

[1575] In letter 1562 I notice Messrs. Mann and Grimmer claim world's record for distance, 1,400 yds. I can find no mention of this distance being done in competition. Would they kindly state when and where this distance was accomplished, and who were the observers? Also, if not achieved in competition, on what grounds is the claim based for a record?

Leeds.

J. WHITAKER.

Stability and Duration.

[1576] We have replied to Mr. Booth's letter *re* his challenge, but we cannot, unfortunately, find time to go to Manchester as suggested.

Mr. Booth offers to send his model for testing, but as this would be hardly fair to either side, we are awaiting a favourable opportunity when both models may be flown at one of the tests of the K. and M.A.A.

In reply to other correspondents *re* duration, who have seen fit to take up this matter after other people, we can only say that we are not disposed to make a personal or individual match with anyone.

So far these tests have been open to all comers, and if Messrs. Mann and Grimmer are so anxious to put up fresh records, we think that instead of competing against an individual model, they should take their chance with the crowd at any of the K. and M.A.A. tests, in exactly the same spirit as we entered our own model.

We are not claiming anything very wonderful for the duration of this "Westonian" model of ours, which at the moment holds the official duration record, but there it is, Mr. Weston holds the record, and until this is lowered, he has perfect right to entitle it "the official record holder."

Having given this explanation which seemed necessary to both firms, Messrs. Mann and Grimmer and Messrs. Overton and King, we trust the matter will end here so far as regards duration records since we have no wish to "open letters" in these columns for the sake of self, or free advertising, but rather would leave it to the opinion of readers when they see official announcements from the Governing body.

May 25th.

WESTON HURLIN CO.

This correspondence is now closed.—ED.]

Aeroplane Mechanics Wanted.

SEVERAL good men are required by an aeroplane constructing company in London, for fuselage work, wing surfaces, &c., also mechanics. They must be thoroughly competent and well used to the type of work. Any communications addressed to "Constructor," care of the Editor of FLIGHT, will be forwarded to the right quarter.

An Enormous Tent.

VISITORS to the Royal Horticultural Exhibition in the Chelsea Hospital Gardens last week were impressed by the huge tents, and especially the grand marquee, which covered the best part of seven acres of ground. It was manufactured and put up by the well-known firm of Messrs. Piggott Bros., Ltd., no less than 43,000 sq. ft. of canvas being required to complete it. It is no wonder that when tents and structures for aviation purposes are required this firm is the first to be interviewed.

Messrs. Handley Page to Sell Howard-Flanders Machines.

WISHING to devote all their attention to the construction of their machines Messrs. L. Howard-Flanders, Ltd., have decided to hand over the whole of their selling organisation to Messrs. Handley Page, Ltd., who will in future act as the sole selling agents for all their products and to whom all enquiries should be addressed. Messrs. Howard-Flanders' new works at Richmond are equipped with the latest machinery for dealing with aeroplane work and it is proposed to extend the school at Brooklands. Four machines are in hand for the British Government and the firm is tendering for a number of others for foreign governments.



Aeronautical Patents Published.

Applied for in 1911.

Published June 6th, 1912.

- 3,330. M. F. SUETER, F. L. M. BOOTHBY AND — PATERSON. Aeroplanes.
- 11,437. A. GOUPEY. Aerostats, aeroplanes, &c.
- 11,438. A. GOUPEY. Airships, aeroplanes, &c.
- 22,408. A. E., H. L., AND H. O. SHORT. Mechanical flying machines.
- 27,021. SOC. ANON. DES ATELIERS D'AVIATION L. BREGUET. Screw propellers for aerial navigation.

Applied for in 1912.

Published June 6th, 1912.

- 9,866. L. A. GOUPEY. Steering and controlling aeroplanes.

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